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Editorials

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TO REPLACE BELLADONNA...



Syntropan has the desirable, antispasmodic actions of belladonna or atropine, but does not depress salivary secretion as actively nor induce mydriasis as readily. When used to induce mydriasis, its influence is not as profound nor as long in duration as that of atropine. The inhibitory action of Syntropan on the parasympathetic innervation of the heart is negligible and not as pronounced as that of atropine. Syntropan has a definite antispasmodic action on spastic smooth muscle, the antispasmodic influence being due jointly to inhibition of the parasympathetic innervation and to direct peripheral relaxing action on the muscle fibers themselves . . . HOFFMANN - LA ROCHE, INC., NUTLEY 10, NEW JERSEY

YNTROPAN 'ROCHE'—FOR THE RELIEF OF SMOOTH MUSCLE SPASM

EDITORIALS

Our Backwardness in Nutritional Matters

AT the annual meeting of the American Dietetic Association much expert opinion was adduced going to show that all is not well nutritionally with the people of the United States. Bad habits of eating and the faulty selection of food continue to play their parts on a vast scale despite relative prosperity. Much hope is reposed in returning soldiers after the war, who will have learned much about balanced diets and protective foods, and who will be dietetic missionaries or at least exemplars, and nutritionists look forward to a post-war era of general enlightenment.

The studies of Dr. Robert S. Harris, of the Massachusetts Institute of Technology, showed that only 7 per cent of supposedly well-fed persons received all of the nutrients recommended by the National Research Council's Food and Nutrition Board; and it is stated that consumption of the so-called basic seven foods advocated by the Board did not insure adequate nutrition, which fact, we presume, has to do with certain commercial market practices, unwise selection of food, faulty cookery, and bad eating habits. These studies covered 71 better-fed families in the Boston and New York districts and 3,300 families scattered throughout the United States, and involved the analysis of the food consumed for its thiamine, riboflavine, niacin, ascorbic acid, iron and calcium content.

The remedy for this sort of thing, thinks Dr. Edward L. Tuohy, of the Duluth Clinic, does not lie in any synthetic direction. "The garden and the field," properly cultivated and utilized, must "continue to be the source of the suitable and multifarious diets that abundant nature has made available for man."

Dr. Tuohy pointed out that unless a great improvement in the diets of the mid-



dle-aged and aged is effected—they are not well fed now—more elderly bones than ever will be broken as time goes on, since the life span is constantly lengthening. By 1980 there will probably be a 35 per cent increase in the number of persons attaining the age of 65 or over, or 22,000,000 in all.

Industry and the Red Cross, as well as the military authorities, must be given credit for much of the recent public education in respect to the essential foods: fruits, green vegetables, fish, cheese, meats, eggs, whole wheat cereals, butter and milk. It is pretty generally known that a fat pocketbook will not necessarily purchase good nutrition and that it is possible for one to be obese and at the same time starving on one's feet for the seven protective foods.

But even the regular purchase of the seven protective foods means little unless the truths brought out by the studies of Dr. Harris are borne in mind; and very much remains to be done educationally.

It is interesting to speculate on the effect that good nutrition would have upon our national destiny. The possibilities are indeed exciting. Involved in this vision is the progress which we seem to be making in the prevention of caries in children by insuring fluorine sufficiency in the water supply. A really well fed nation with good teeth would transform its culture and world significance in the direction of greatness.

Benzopyrene and Carcinogenesis

SIGMUND FREUD died in 1939 after sixteen years of atrocious suffering from cancer of the mouth. He had been a very heavy smoker for many years. One close associate has stated that he smoked twenty cigars a day.

The carcinogenic properties of benzopyrene, a constituent of tobacco tar, when



New York's First Hospital

Opened in 1776

"The gate of the temple which is called Beautiful" Acts III. 2.

. . . See Cultural Medicine, on page 365

continuously applied to predisposed tissues, have been established on an imposing scale by A. H. Roffo and others.

Freud's case would seem to afford an instance in which the specific relationship of the benzopyrene factor to buccal pathology was a little more than merely probable.

We suppose the cases of Ulysses S. Grant and of Grover Cleveland were somewhat parallel ones.

The pathogenesis of such lesions in the notable or great somehow commands more respectful consideration than in obscure members of the populace. Historically considered, we have no doubt that it was lues in such characters as Henry VIII that most challenged and stimulated the syphilologists of the past.

In the case of the mighty we are even prone to respectfully consider prophylaxis.

So such cases as that of Freud provoke a more than ordinarily thoughtful mood, in which the lungs as well as the mouth figure.

The Relation of Diet to the Intellectual Keeness of Children

DR. Roger J. Williams, of the University of Texas, famous for his work in the field of vitamin research, confirmed an old suspicion of many of us, to wit, that a bad diet can ruin a good intelligence, when he said: "There can be no doubt that much dullness on the part of school children, particularly among the lower income groups, can be traced in part to a lack of the proper kind of food and specifically to the lack of enough vitamins. . . . Intelligence and morality go together. The more intelligent a child is the less is his tendency to cheat, lie, steal or become delinquent. This high correlation between intelligence and morality can lead us to one conclusion. Since an ample supply of vitamins can foster a higher intelligence in human subjects it has also the capability of fostering morality. Vitamins in the future will not only give people better health, both bodily and mentally, but will increase their intelligence and morality."

MEDICAL TIMES, DECEMBER, 1944

We like this much better than the old idea of fixed and fatal heredity and commend it to the attention of educators, reformers, disciplinarians and the clergy.

Cooperative Suicide

THE suicide rate is said to fall in wartime. "No satisfactory explanation has been offered to account for this phenomenon." But war itself has been defined as cooperative suicide in a sense and if this definition is accepted then the suicide rate should be held to be heightened in wartime.

Suicide as engaged in today by individuals is condemned as a crime by the same society which paradoxically condones cooperative suicide.

Human altar sacrifice among primitive peoples was done away with when the priesthood overdid it and at the same time a healthy skepticism arose which considered the economic loss. But even peoples who have attained a high culture have never succeeded in abating cooperative suicide.

In the case of human altar sacrifice animals were gradually substituted and it was found that the gods could be adequately appeased in this way. Even symbols, like the color red, ultimately came to be accepted as substitutes for blood.

The fascination that suicide holds for the Germans as individuals, as shown by their high rate, has a bearing upon their remarkable preoccupation with cooperative suicide, or war. Also bearing upon this preoccupation of the Prussian element are the bloody methods preferred—cutting and stabbing.

Just as primitive peoples pass the stage where altar sacrifice is abated it is to be assumed that peoples who have attained a high culture—even the Germans—will yet become skeptical about cooperative suicide. The fact that the vast majority of men today see individual suicide rather clearly for what it is and do not approve it justifies the hope that they will some day reject the cooperative suicide still utilized and overdone so enthusiastically by the political priests of our world.

PRIMARY ATYPICAL PNEUMONIA (VIRUS TYPE)

Frank Bethel Cross, M.D., F.A.C.P.

Brooklyn, New York

CERTAIN irregular forms of pneumonia we shall always have with us. I refer to lobular, migratory, central, anesthetic (atelectatic), hypostatic, rheumatic, asthenic, contusion pneumonia, embolic and lipoid pneumonias. At times, however, a definite type becomes prevalent and appears to dominate the clinical field. Thus, in 1918-1919 a virulent hemorrhagic pneumonia swept our country, a pandemic with heavy mortality. Another example was the bronchopneumonia which in England after World War I replaced lobar pneumonia, the latter practically disappearing. Incidentally, this was not the case in the United States.

Quite early in 1942 it became obvious that a new type of pneumonia was being met with an increasing frequency. It was notable in our medical service at the Methodist Hospital and in cases seen in private practice.

We were familiar with Reimann's paper on "An Acute Infection of the Respiratory Tract with Atypical Pneumonia" in 1938, and Longcope had reported in January 1942 his experience with 40 cases of Atypical Virus Pneumonia in Baltimore. Miller and Haynes had described bronchopneumonia of mild severity at the University of Oregon in 1939 and in 1940 Murray had written on "Atypical Bronchopneumonia of Unknown Etiology".

Thus clinicians were seeing in increasing numbers a pneumonia with unusual features. In some instances, the cases were grouped in small epidemics. This type appeared to by-pass New York, certainly Brooklyn, until 1942.

As we examined its characteristics, the conviction grew that we could properly speak of it as an atypical pneumonia. There was no desire to create a new type, yet when the features of this type were considered and appraised, certainly the judgment of applying a distinctive name appeared to be fully justified.

What should we call this pneumonia? Upwards of 20 names have been suggested. The term "Virus Pneumonia" has the call at present: it is short, descriptive and has a popular appeal. It comes glibly from the lips of the victim and his family,

and connotes a superior knowledge. The questionable thing about it is that we do not yet know that it is a correct designation etiologically. Laboratory confirmation still is lacking.

The Army name is "Primary Atypical Pneumonia, Etiology Unknown". The Navy calls it "Primary Atypical Pneumonia". It can be called "Reimann's Type Pneumonia", or "Longcope's Type". Likewise, it could be termed "Primary Bronchopneumonia".

However, at this writing, I would personally prefer to designate it as "Primary Atypical Pneumonia (Virus type)", or "Primary Atypical Pneumonia", for short.

Frequency: At the Methodist Hospital, in our first limited acquaintance with the disease, there were in 1942

66 cases of Primary Lobar Pneumonia with 4 deaths

3 cases of Primary Bronchopneumonia with no deaths

8 cases of Secondary Lobar Pneumonia with 8 deaths

2 cases of Secondary Bronchopneumonia with 2 deaths

23 cases of Primary Atypical Pneumonia (Virus type) with 1 death

The characteristics of this atypical pneumonia are as follows:

Age: mostly young adults.

Onset: Two weeks after exposure and usually following a coryza, or the feelings of "malaria" for two or three days, the patients carry on at work or on duty until the advent of fever and chilliness adds factors which send them to bed. With the fever come headache, heaviness in the chest, throat irritation, and general body pains; many times also a hard, dry, racking cough, with very little, if any, sputum. Actual chills, herpes labialis and pleural pain are usually absent. The pulse and respiration are relatively slow.

On physical examination: there are uniformly present telltale râles, in showers and associated with inspiration. These are unilateral and over part of a lobe: as for instance, the upper part of the R.L.L. or the lower part of L.U.L. As a rule they rarely are heard over the entire lobe: some part of the lobe housing the inflammation invariably escapes.

On percussion, dullness may be evident, or it may be absent. Occasionally tactile fremitus may be increased. In some few

cases lessened expansion of the affected side can be demonstrated. Generally a small area of bronchial breathing will be identified. This may be noted usually on the second or third day. It is rare that geographical boundaries can be defined as in lobar pneumonia.

The sputum findings are variable. Usually little in amount, the sputum is raised with difficulty; it is seldom blood-tinged. Its bacteriology is not helpful. Pneumococci are but rarely found and then only as secondary invaders; the report may specify various streptococci and *Staphylococcus aureus*.

The leukocyte count is usually low in this type: 6000 to 8000; occasionally as low as 4000. In the few cases, 10,000-12,000 cells are present. The polymorphonuclear percentage is either normal or low, as a rule.

The x-ray findings have been of great assistance to the clinician who has been dealing with a disease with such minimal diagnostic criteria. The x-ray in lung cases is of prime value, even beyond that of percussion and auscultation in many instances. The x-ray specialist has become a clinician, as has the pathologist, with scientific interests beyond mere films and mere tissues.

In this problem, the radiographic findings have not been constant. There are several patterns of shadows: to wit,

1. A small area of pneumonia made up of homogeneous patches of the soft, hazy density of exudation and the irregular linear shadows of a productive process along the smaller bronchi.
2. A widely disseminated bilateral mottling, fairly dense and suggestive of tuberculosis: in fact, occasionally so interpreted.
3. A large area with irregular outline filling $\frac{1}{2}$ to $\frac{3}{4}$ of a lobe and looking much like a neoplasm.
4. Such an area in an upper lobe, resembling an apical tuberculosis, from which it is indistinguishable radiographically.
5. In early cases, definite increase of central bilateral hilar density, which speaks for marked pulmonary congestion.

The radiographers have been quick to learn their lesson, and in the majority of instances have not hesitated to record their findings (with the exceptions noted)

as "atypical pneumonia, virus type". Both radiographer and clinician must be on guard in the presence of indeterminate findings and ask for re-check in a few days.

In one case, running a protracted course, resolution was so slow that plates taken 10 days apart could be superimposed, so unchanged were the shadows.

Course of the disease:

In the mild cases, after three or four days of moderate fever (102° - 103°), a drop is observed and the curve falls to normal by gradual lysis, normal being reached by the fifth to tenth day. Subsequent short rises are occasionally seen.

In the severe cases, all symptoms are augmented. The temperature is higher and protracted, the cough is greater, and extension may occur into other lung areas. The patients are prostrated, with cyanosis. The dyspnea of the pneumonitis may be marked. Some patients develop asthmatic breathing.

The temperature may go on into the third week. One patient looking like typhoid in the second week really had typhoid fever in addition to his pneumonia, so that the physician must always be watchful.

Even in the severe cases, the leukocyte count continues low. In the one fatal case, of our first group, the leukocytes were 5,850 with 70 per cent polymorphonuclears.

The prognosis is uniformly good, as seen from the figures previously quoted.

Cause: Here we must pause and ponder. The pneumococcus is rarely if ever present and, when found, acts merely as a secondary infector. Streptococci and staphylococci are observed, but no relationship to the disease can be established.

In the category of viruses, it is unquestionably true that various organisms of this group have been observed in lesions of this type. Psittacosis pneumonia, for instance, is rare, but perhaps more frequently seen than diagnosed, since the avian contact is not always established with ease and the necessary laboratory tests are delicate and not attempted by most pathologists.

The viruses A and B of influenza have not been identified with the present atypical pneumonia and perhaps definitely ruled out since test inoculations of ferrets with lung tissue from some of the fatal cases have been negative.

The *Rickettsia diaporica* of "Q" fever has been found in an institutional epidemic

of pneumonitis (Dyer, Topping and Bengtson), but no virus has to date been discovered in the pneumonia under discussion.

With the electronic microscope now available with its extraordinary powers of magnification, we would expect definite recognition of any virus present. This has defied experiments up to the present time.

The virus virulent for the mongoose has been studied by Weir and Horsfall.

Pathology: This naturally excites much interest. In those few fatal cases studied and reported, bronchopneumonia lesions were observed. The bronchi showed desquamative changes, while the adjacent lung tissue showed infiltration with mononuclear leukocytes and red blood cells. The interstitial tissue showed many small lymphocytes and large mononuclear cells, a few polymorphonuclears and occasional masses of sound cells and detritus.

It may be emphasized that these are not the findings of the 1918-1919 influenza pandemic of hemorrhagic bronchopneumonia.

Treatment: The usual regimen of bed and light diet is established. Aspirin in five and ten grain doses with mild alkalies is given every three hours. The more depressant antipyretics are avoided, unless there is a severe headache. The sulfonamides have been of no benefit except in the occasional case. I have reference particularly to sulfathiazole and sulfadiazine. Penicillin has been uniformly ineffective.

The cough has required special consideration. Ammonium salts and codeine have been adequate usually. For an associated laryngitis, steam inhalations have been helpful. Other treatment is symptomatic. The circulation has required no treatment, as a rule. Oxygen should be given when cyanosis is present. The im-

portance of this cannot be over-emphasized, since cyanosis marks the severe case.

In convalescence bitter tonics, iron by mouth, and vitamins to meet suspected deficiencies may be necessary.

And so, here is a disease occupying a large portion of the pneumonia field, differing in type from the classic groups, and presenting a minimum of criteria, which must be taken into consideration in toto that a diagnosis may be reached.

When this is done, the combination of a history of exposure and a few days of upper respiratory "cold", the described temperature range, negative sputum, low leukocyte count, physical findings as given in detail, and a well interpreted x-ray film, gives us the basis for the diagnosis of "Primary Atypical Pneumonia, Virus type".

A chart of differential diagnosis from lobar pneumonia is appended. Also, a bibliography of pertinent references.

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Summary of Differential Diagnosis

	Atypical Pneumonia	Lobar Pneumonia
Age	20-30	20-50
Incubation	10-14 days	3-5 days
Preceding status	Coryza	Coryza and laryngitis
Onset	Chilliness, often persistent	Chill
Fever	102°-103.5	103°-105°
Pulse	100-110	120-130
Respiration	20-30	30-40
Sputum	No characteristic organism	Pneumococcus (75 types)
Leukocyte count	4,000-8,000	12,000-22,000
Signs	Few rales; other signs minimal	Dulness, rales, bronchial breathing
X-ray	Small area of pneumonitis in one or more lobes	Entire lobe involved
Duration	5-10 days: prolonged in severe cases, 2-4 weeks	8-12 days untreated, 2-4 days treated
Complications	Effusion, recurrence of pneumonia	Effusion
Prognosis	Excellent: deaths 1/2-1%	2-5% in hospital cases
Therapy	Symptomatic: no response to sulfonamides or penicillin	Specific response to sulfonamides, serum and penicillin
Convalescence	Usually slow, usually with slow lung clearance	Usually prompt, unless effusion is purulent

SPECIAL ARTICLE

SOME MEDICAL ASPECTS OF FLYING

Air Marshal

Sir Harold E. Whittingham

**K.B.E., LL.D., M.B., Ch. B., F.R.C.P.,
F.R.F.P.S., D.P.H., D.T.M.&H., K.H.P.**

**Director General of Britain's Royal Air Force
Medical Services**

THE Royal Air Force Medical Service has played a part in the air war no less vital, but only less conspicuous, than that of combat crews and aeronautical designers. Much of the success of Britain's bombers and fighters both by day and by night is directly due to the unending research of doctors and scientists into the problems of aviation medicine. For, in addition to safeguarding the fitness of Air Force personnel throughout the world, their task has been to cope with the special physiological conditions of high speed, high altitude air fighting.

To test medical theory and facts under actual flying conditions, over 120 medical officers have taken their wings as pilots. Chief among their subjects of investigation have been the effects upon the aviator of height, flight and night, and their findings and precautionary measures can best be discussed under these three heads. It will be remembered, where detailed reference must be limited, that the Medical Service has everywhere worked in conjunction with aircraft constructors, engineers, physicists and specialists in fabrics, who have implemented their recommendations.

ALTITUDE flying presents various problems for medical science to overcome on behalf of aircrew. Most of them are related to the vital supply of oxygen at the right pressure. Although the percentage composition of the air is the same from ground level to the stratosphere, air becomes lighter at higher altitudes, so that the amount of oxygen taken in each breath becomes less and less. Air pressure at 38,500 ft. is one fifth that at ground level, and at that height even if pure oxygen is breathed, one per cent less is inhaled than in ordinary air at ground level. Thus, at altitudes over 38,500 ft. man cannot exist for long unless pressure is applied to compress the oxygen supply.

Symptoms of oxygen lack (anoxia or altitude sickness) occur after remaining for an hour or more at 10,000 ft. Diminished mental alertness, sleepiness and an unwarranted sense of well-being are followed at 15,000 ft. by decreased visual acuity, and at 18,000 by dullness of hearing. Delayed reaction time, muscle weakness and unconsciousness lead eventually to complete collapse; and these symptoms occur much more quickly if physical effort is being required. The after-effects of anoxia are fatigue, headache, nausea, mental confusion and prostration.

To demonstrate some of these effects, so that aircrew may be aware of the insidious approach of anoxia, tests are made under the supervision of a specially trained medical officer in low-pressure chambers. Here atmospheric conditions of altitudes up to 70,000 ft. can be simulated, and at regulated speeds of climb. Deterioration in their handwriting, errors in simple arithmetic, contrasted scores on shooting gallery devices with and without oxygen, and blind flying tests on modified flying panels soon convince the doubting Thomases of the dangers attending oxygen starvation. An anoxia meter can also be incorporated on the instrument panel of aircraft; it shows on a scale, operated by means of a photo-electric cell fixed to the lobe of the ear, whether or not the pilot is receiving sufficient oxygen.

Oxygen indoctrination is now an important part of all aircrew training. Flying personnel are instructed in the sensations and warning signs of oxygen want, and in the precautionary measures to take. They are shown how to clear their middle ears during rapid ascent or descent, how to avoid or overcome abdominal distension, and how to obviate "bends."

In daytime there are strict orders that oxygen must be used for all flights over an hour in duration at 10,000 ft., and for all flights of whatever duration at 15,000 ft. or above. By night oxygen must, for reasons of vision, be taken during all flights above 4,000 ft. and be continued by gunners and pilots until the aircraft lands. Masks are used to feed oxygen from a high pressure receiver: the pilot, by means

of a regulator in the instrument panel, adjusts the rate of flow every 5,000 ft., allowing each time a margin of 5,000 ft. above the actual altitude of the aircraft. For aircrew members whose duties involve moving about the aircraft a light walk-about bottle, containing enough oxygen to last 20 minutes, has been designed. Except when going from point to point, however, they plug in to numerous supply points provided throughout the fuselage.

Parachute descents from high altitude call for another special oxygen bottle. Fitting into the dinghy parachute pack and weighing only 3½ lbs., this bale-out bottle contains enough oxygen (10 minutes' supply) to prevent aircrew from becoming unconscious during falls to a non-oxygen requiring level. Members of the R.A.F. Physiology Laboratory undertook dangerous experiments, suspended in parachute harness in a low pressure chamber, to find out how long a man could live, even though unconscious during high altitude parachute descents. At the rate of descent of an open parachute in atmospheric conditions obtaining from 40,000 ft. down, it appeared that a man could live up to 7½ minutes.

But that length of time would be required to reach 20,000 ft. if baling out took place at 35,000 ft., and consequently it was improbable that men falling from 40,000 ft. without oxygen supplies would regain consciousness. Even after a delayed drop from 35,000 to 20,000 ft., taking only 1½ minutes, the average individual would be too anoxic to pull the rip-cord. Consequently, the introduction of this emergency oxygen set has greatly increased the confidence of aircrew operating at higher altitudes.

It has been seen that in flights above 38,500 ft. it is necessary, in order to obtain the requisite amount, to compress the oxygen breathed. Pressure suits, based on the design used when Flight Lieutenant M. J. Adams in 1937 reached 54,000 ft., have the disadvantage of impeding the wearer's movements. The pressure cabin is undoubtedly the best answer to stratosphere flying. Here pressure corresponding to that of the atmosphere at 18,000 ft. can be maintained, and the aviator can enjoy unrestricted range of action. Should the cabin be punctured by a cannon shell, say at 44,000 ft., the resultant explosive decompression produces no apparent ill-effects on a fit individual breathing oxygen.

In non-pressurized aircraft aircrew are

liable to suffer decompression sickness or "bends" after flying for a time at altitudes over 30,000 ft. Lowered atmospheric pressure causes nitrogen bubbles to form in the blood-vessels and in certain tissues of the nervous system. Muscular effort or shivering from the cold then increases liability to "bends," owing to the production of vortices in the blood stream. The common symptoms are itching of the skin, joint pains, visual disturbances, chest pains or chokes, followed sooner or later by paralysis, unconsciousness and presumably death. After-effects such as blind spots, headache and mental aberration may remain for several hours.

To combat this dangerous effect of high altitude flying personnel are tested for greater or lesser liability to "bends" by observation in the low-pressure chamber. Those who develop severe pains or chokes are rejected. Fit young aircrew, not over 30 years of age, and not of the obese type, enjoy comparative immunity if certain precautions are taken. Breathing oxygen for half-an-hour immediately before a flight, or exercise just before emplaning, and the administration of nitrates decrease the incidence of "bends" by displacing much of the body nitrogen or by opening up the smaller blood vessels and lessening vortices.

A further complication of existence at great height is cold. Air temperature decreases about 1°C. for each 500 ft. of ascent up to a height of 35,000 ft., thereafter up to 70,000 ft. it remains constantly at 55°C. As the gun apertures and clear vision panels necessary in Service aircraft make efficient cabin heating very difficult, special flying clothing has been designed to protect aircrew against the effects of severe cold. Many types of hot-air and electrically-heated suits, boots and gloves—expertly made to combine lightness and flexibility, and having waterproof qualities as well as permeability to air for ventilation—were tested to find clothing suitable not only to high altitudes but for baling-out in Arctic regions.

Exposure to cold slows the circulation and respiration, produces increasing anoxia and leads to physical and mental sluggishness. An efficient oxygen supply is therefore especially important and steps have been taken to prevent freezing of the oxygen mask.

Another effect of severe cold is frostbite, which occurs most readily in exposure to draughts or in contact with bare metal.

Its onset is insidious and painless, so that aircrew must be indoctrinated regarding its ill effects, and the precautionary measures to take. Nowadays the incidence of frostbite amounts to only one case in 2,000 sorties, or among 12,000 individuals.

THE second main subject of medical research, flight, concerns the physiological effects of aerobatics and high speed upon flying personnel. Modern aircraft, capable of flying at very high speeds and with a very fast rate of climb, impose a particular strain upon their occupants. It arises not from their speed alone, but from sudden speed change, or from change in direction.

The degree of acceleration or deceleration acting on a man or aircraft is expressed in terms of the force of gravity, "g," which causes a body to lose weight. A force of 6 "g" means that body weight increases to six times the normal, blood becoming as heavy as molten iron, so that the heart is barely able to maintain circulation to the head. In aircraft during tight turns, or in pulling out from a steep dive at high speed, sudden acceleration is applied to the body through its long axis if one is in the normal sitting position. Centrifugal force thus drains blood from the head to the most dependent parts of the body. Without an adequate blood supply the retina and brain quickly cease to function; blacking-out occurs and may be followed by unconsciousness.

An average individual in the normal sitting position is liable to blacking-out when a force of $4\frac{1}{2}$ "g" has been maintained for at least 4 seconds, although the fit, stocky person with a relatively short column of blood between heart and brain may withstand 7 "g" before blacking-out.

Bodily sensations caused by high "g" are, first, the feeling of being forced violently into the seat of the aircraft and of the soft tissues of the face being sucked inwards. The abdominal contents fail to be displaced into the pelvis, greyness of the visual field is noticeable, then sudden blindness occurs, sometimes accompanied by momentary unconsciousness.

The dangers of this condition during critical manoeuvres in operational flying will need no emphasis here. And if he attempts to avoid blacking-out by avoiding tight turns the pilot no less lays himself open to danger from attack by a more venturesome enemy.

To enable pilots, therefore, to withstand high "g" manoeuvres and still to retain fighting efficiency several measures are employed. If he adopts a crouched sitting position with legs raised and thorax approximated to the thighs, an individual can increase his "g" threshold by about 2, bringing it up to $6\frac{1}{2}$ or 7 "g." In this position height to which the heart has to pump blood to the brain is reduced by about half, so that there is less chance of blood gravitating to the legs. Incidentally, legless pilots like Bader have a high "g" threshold, as there is less area into which blood can drain.

Exercises to increase the tone of the abdominal wall muscles, or the raising of the diaphragm and so contracting the abdominal wall by yelling loudly during aerobatics, both help to prevent blacking-out. An adequate oxygen supply and avoidance of alcohol and tobacco are perhaps obvious precautions. Finally, selection of personnel suited to aerobatics can be made in the clinical room by using a tilt table to eliminate those with poor cardiovascular tone.

THE third special problem of aviation medicine relates to night flying. The pilots of night fighters, intruders and bombers must be both carefully selected and carefully trained for night vision. Not only good light-and-dark adaptation but good form sense is required. Tests made on the Rotating Hexagon eliminate those who are ocularly unsuitable for night flying duties. The subjects first wear dark goggles, fitted with filters having a light transmission of 3.36 per cent, for half an hour in an ordinary lighted room. Then, after 15 minutes' further adaptation in a fully darkened room, they proceed to read dimly illuminated figures, letters and silhouettes on the drum.

To increase efficiency on night operations the following main physiological precepts have been laid down. The line of vision should be sideways or vertically at an angle of 6 to 10 degrees, in order to make the best use of the rod cells. Before take-off dark adaptation for half an hour with ruby-red goggles should be undertaken. Oxygen must be used from ground level up, as the rod cells are particularly sensitive to anoxia. Windscreens must be kept scrupulously clean from scratches, dust or grease spots. Lastly, to get the best out of cockpit lighting

without spoiling dark adaptation, the red lighting should be used at the lowest level at which instruments can be read.

Training for night vision is thorough and complex. It includes practice with synthetic devices in target sighting, in recognition of silhouettes and in systematic scanning at all levels of illumination. The appearance from the air at night of objects, colors, water, in conditions of reflected light, shadow, fog, snow and different degrees of darkness, is studied.

There are methods to be learned of self-protection from searchlight dazzle, of using dark adaptation goggles and night binoculars, of viewing targets by flare and the calculation of apparent size and distance of objects. Carefully graded physical training in a blacked-out gymnasium helps both to select men with good night vision and to improve morale on operations.

THE application of these various methods and safeguards to operational flying is studied and tested by medical observers. Chosen according to their skill in aviation no less than in medicine, they

are appointed to each Command for the physiological and psychological care of aircrew.

Working in conjunction with the Flying Personnel Research Committee, the medical observers follow up all new procedures in order to note human reactions under combat conditions. Their findings are referred back to the research staff, and the results come before the Air Officer Commanding and the Air Council. Some medical observers, in the course of this work, have taken part in as many as sixty sorties all over the world: individuals have made up to two hundred parachute drops. Their duties involve being dropped with an air/sea rescue lifeboat to make vital blood transfusions on the spot, and already their deeds have earned a number of Distinguished Flying Crosses.

It is hoped that enough has now been disclosed to indicate the vital part medical science continuously plays in British air superiority. The Royal Air Force Medical Service works to the end that British pilots and aircrew shall not only be the best trained and best equipped, but also the most physically efficient in the world.

MENTAL HYGIENE

CASE NOTES IN EXTRAMURAL PSYCHIATRY

Case XIX: Ambulatory Electroshock Treatment of a Fifty-eight-Year-Old White Male Suffering from Pathological Depression

Frederick L. Patry, M.D.

Albany, New York

Complaint Problem:

REFERRING physician stated that patient was depressed, slept poorly, and failed to respond to hypnotics. Patient stated that he was very nervous and could not shake it off. Hands perspired. It was difficult to contain himself so that he had to leave the movies. Concentration impaired. Soreness above rectum.

Present Illness:

In usual health until six weeks ago (August, 1943). At that time patient began to notice increased perspiration under arms and of hands. He also began to void more frequently; nocturia once. He said he had prostate gland trouble for which he received massage and medication from an urologist. At one time he noticed

some blood in the urine which scared him. Gas on stomach. While visiting his son in the armed service he noticed he was easily excited. He consulted a third physician who informed him that he had "just a case of nervousness." Pills after meals were prescribed.

For several weeks he complained that work in the office was increasing in amount. Changes had been made among fellow employees. This resulted in new difficulties. He continued at work until three days before consulting me.

Sleep:

Disturbed owing to nocturia.

Mood:

Better in the morning; in the evening he was inclined to worry. "Right now my mood is zero and has been so since an increase of nervousness two weeks ago." At that time his son departed for the

Army. Since then there has been an increased jittery-ness and sweating. No suicidal thoughts admitted. "It's a shock to think I could get sick." (Patient has enjoyed good health throughout his life.)

Appetite:

Fairly good although there has been a loss of three pounds.

Sex:

Diminished libido past four years but without conflict.

Course:

Increase of symptoms the last two weeks.

Personal History:

Born in New York State the younger of two children. Birth and development normal. Neurotic traits denied.

Personality:

Easy-going, cheerful, mixer. No mood dips or elations.

School:

Finished eighth grade at sixteen years.

Work:

Following a brief period at odd jobs, he entered present employment at age of 17 years.

Home:

Lived in lower flat of a two-family house the past three years.

Sex:

Married thirty-six years; happily adjusted. Wife, aged 51, well. Menopause four years ago. Happy-go-lucky personality.

Past Illnesses:

"Stomach trouble" six years ago lasting five weeks characterized by gas on the stomach when lying down. Cured by eliminating fried food. No severe illness, operations or accidents.

Habits:

No alcoholic drinks. Recently has been smoking more than usual (one and one-half packages of cigarettes daily). Essentially a home type of man. Enjoys sports passively. Likes cards and reading (fiction).

Family History:

Father, died aged 74, twenty-two years ago. Cause unknown. Personality: well-

adjusted. Mother died aged 55, twenty-six years ago. Cause unknown.

Siblings:

Patient's brother died in early life, cause unknown.

No history of nervous or mental diseases in maternal or paternal lines.

Physical and Neurological Examination:

General Observation:

A tall, well-developed, heavy set (pyknic habitus), well-nourished white male of Irish extraction. Hair gray. Florid complexion. Height 5 feet 10½ inches. Weight 197 pounds. Blood pressure 144/84. Heart sounds normal; apex 11.5 cm., 5th left interspace. Lungs clear. Thyroid normal. Blood Wassermann and urinalysis normal.

Cranial Nerves:

Normal. Has worn glasses for many years. No eye symptoms.

Sensory:

Normal.

Motor:

Normal. No tremor.

Reflexes:

Tendon reflexes increased.

Vegetative Nervous System:

Increased perspiration. Increased vasomotor response. Easy lachrymation.

Endocrines:

Normal.

Mental Examination:

Attitude and General Behavior:

Cooperative. Tense. Anxious for help. Neat and of fine appearance socially and intellectually.

Stream of Thought:

Connected and relevant. Spontaneity diminished.

Mood:

Tension depression. States spirits have been on the low side, especially the last week or two.

Content of Thought:

"Every little thing bothers me." No delusions or hallucinations. Depressive trend.

Sensorium:

Correctly oriented. Memory is good. Concentration somewhat impaired. Psy-

chomotor retardation revealed in subtracting successive 7's from 100. Simple calculation done correctly.

Diagnosis:

Psychoneurosis, severe, reactive depression during the involutional period. There have been no previous pathological depressions or excitements. The present attack is understandable in the light of patient's constitutional and personality make-up, and involutional period wherein he has been subjected to increasing emotional stresses and strains attributed to mounting responsibility with increase of work load and changes of personnel at work, as well as reactive depression to his son's departure for over-seas. The rather marked psychosomatic symptoms relative to kidney and gastro-intestinal function, prostate over-sensitivity and soreness in rectal region are frequent concomitants of emotional tension and conflict. They represent "body protests" or conversion symptoms and have been aptly referred to as "organ language" in that various organs and part-functions loom up with increased awareness. Such complaints are rooted largely in unconscious emotional conflicts or in mood disturbance, especially of the down or depressive type.

Prognosis:

Good.

Treatment:

Ambulatory electroshock treatment was recommended. Patient first reacted with a petit mal response to 130 volts at 0.1 seconds; he responded likewise with 120 volts at 0.2 seconds at the same treatment. On the next treatment day, three days later, he responded with a grand mal convulsion, immediate type, using 120 volts at 0.3 seconds. Thereafter he received three additional treatments at same voltage and timing resulting in the grand mal, immediate response. After the third treatment both patient and his wife stated that his spirits were definitely higher,

sleep had improved, and perspiration was less. After the fourth and fifth treatments there was further improvement. Temporary memory impairment occurred but this soon disappeared. There was a loss of weight from 197 pounds to 190 pounds within two weeks. This was in keeping with the patient's wish to lose weight.

At first elixir phenobarbital, dram one, was given every four hours and at bedtime. Belladonal (Sandoz) $\frac{1}{2}$ tablet was prescribed three times daily and at bedtime. Seconal, grains $1\frac{1}{2}$ for sleep as required.

Progress Notes:

From October 8th to 18th, 1943, patient had four grand mal reactions. There were also two petit mal reactions the day of the first treatment. Improvement, however, did not take place until after the third treatment day. He returned to work two weeks after his first electroshock treatment. His wife stated on October 22nd that patient was not so nervous, that his "hysteria" had all gone. Psychosomatic symptoms disappeared. However, there was some impairment of memory: it was necessary to remind him of certain obligations and of some recent events. He now was sleeping without a hypnotic. Spirits improved and he felt like meeting people again. Concentration was much better so that he enjoyed reading magazines and newspapers. He resumed playing cards although there was some slight tendency to confusion in making certain plays. The last notation on November 26th, 1943, states that he is looking quite rested. "My mental attitude is 100 per cent better. Physically, however, I tire a little." Sleeps well without medication. Describes appetite as excellent. Adequate to meeting work demands. Accepts his son's absence in the service in an objective manner. During the past year patient has continued at his work and has made a complete recovery from his illness.

218 STATE STREET



New York City's Major Health Needs

ERADICATION of tuberculosis and venereal disease; postponement and control of cancer, mental breakdown and the crippling diseases of middle age; and creation of new mechanisms for the equitable distribution of medical services with the objective of keeping people well

—these are the principal health challenges which New York City must meet, according to Dr. Ernest L. Stebbins, Commissioner of Health; Dr. George Baehr, director of clinical research at Mount Sinai Hospital; and a number of other public health experts writing in *Better Times*, official publication of the Welfare Council of New York City.

CULTURAL MEDICINE

THE NEW YORK HOSPITAL

ON July 12, 1776, two British warships forcing a passage up the Hudson engaged New York shore batteries manned by troops of the Continental Army. A cannon ball from one of the warships landed in the grounds of a newly built hospital at Broadway and Pearl Street, and later this hospital received as its first patients American soldiers who had been wounded in the aforesaid battle.

So began the New York Hospital's long and distinguished service to the people of the City of New York and of the nation.

THE New York Hospital was the second incorporated institution of its kind in the American Colonies, the first one having been the Pennsylvania Hospital, chartered in 1751.

On May 16, 1769, Dr. Samuel Bard, speaking in Trinity Church at the graduating exercises of the first class (consisting of two members!) of the Medical School of Kings College (now Columbia University), urged the establishment of a general hospital "for the care and relief of the sick" and as "the best and only means of instructing students properly in the practice of medicine." Bard played the same part in connection with the New York Hospital that Dr. Thomas Bond and Benjamin Franklin did in respect to the Pennsylvania Hospital. Dr. Bard, appropriately, became The New York Hospital's first attending physician.

The Hospital was organized in 1770 and chartered by George III in 1771. Funds were provided by the Colonial Assembly and by individual Englishmen of note, for example the Earl of Stirling, who contributed 20 shares in the Delaware lottery. Five acres of land were purchased at Broadway opposite Pearl Street, a corner stone laid on September 3, 1773, and a building practically completed when on February 28, 1775 it was destroyed by

fire. More funds were promptly raised and a new building was completed within a year. It was this new hospital, as yet unopened for patients, which suddenly found itself within range of the British guns shortly after the outbreak of the Revolution and ready for its first reception of patients, for on April 2, 1776, the New York Committee of Safety had ordered the Governors of the Hospital to put it in a proper state for the reception of Continental troops, including the throwing up of breastworks and the posting of troops.

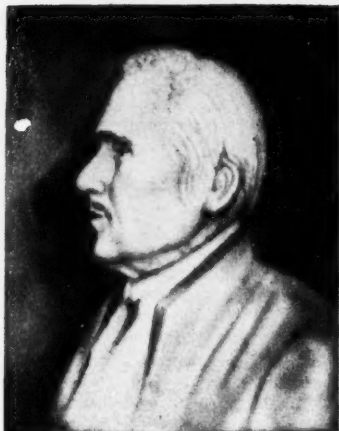
But in September of 1776 the British and Hessians occupied the City, including The New York Hospital, which they used both as barracks and as a military hospital for seven years. It was not until 1783, after the close of the war, that readjustment was effected and medical instruction started by a staff which from the beginning had been intended to be a teaching faculty, and not until 1791 that the first civilian patients were admitted to the Hospital's 500 beds. At this point begins an institutional existence in the course of which there have been outstanding features some of which we shall cite. For the history of this hospital is the history of the city. When George Washington's official residence was in New York, Dr. Bard was his medical adviser; when Alexander Hamilton was shot by Aaron Burr in their Weehawken duel, a physician and a surgeon of the Hospital's staff cared for him; Lafayette was a member of the Society of The New York Hospital; among the Governors will be found many noted names, viz., John Jay, Robert R. Livingston, James Kent, Richard Varick, Cadwallader Colden, and Joseph H. Choate.

BUT of course the Hospital's great accomplishments have been made possible by its physicians and surgeons. The early surgical work of the Hospital has been ably chronicled by Drs. Eugene H.

From the Editorial Research Department of the MEDICAL TIMES.

Pool and Frank J. McGowan (*Surgery at The New York Hospital One Hundred Years Ago*, Paul B. Hoeber, Inc., 1930). The New York Hospital "was the great school of surgery of the whole country." Pool and McGowan tell the story of the great pioneer surgeons, Valentine Seaman, Wright Post, Valentine Mott, Alexander H. Stevens, John Cummings Cheesman and John Kearney Rodgers, and that of two great physicians, Samuel Bard and David Hosack. Obviously, it remains for someone to bring the story of the medical and surgical personalities who have since made the Hospital tick down to date.

The New York Hospital reminds one of the medieval University of Paris, to which flocked students from everywhere to saturate themselves, literally *without price*, in the fascinating scholastic atmosphere of the place; for as many as 600 students were made welcome at one time from various medical schools to avail themselves of the time and services of the staff-faculty of the New York Hospital, which were given "for nothing." The period of which we are writing was 1846. The Hospital of that day was indeed described by Edward Sheldon, sometime President of the Board of Governors, as a "national university of medicine;" by Dr. D. B. St. John Roosa, a former interne and at the time of his remarks President of the New York Post-Graduate Medical School, as "preëminently a medical school. It was one of the first—if not the first institution in our country, to place itself open for clinical instructions. . . . It was one of the first in the world to demonstrate thoroughly the fact that no instruction in the practice of medicine and surgery is worth the name that is not clinical;" by Dr. William Van Buren, a consulting surgeon of the Hospital, as "a great center [*italics ours*] of instruction in the art and science of medicine . . . known abroad as the seat of original operations and solid advances in medicine and surgery. . . . It was the most extensive school of practice in the country;" and by Dr. John Watson, one of its surgeons, speaking in 1846, as a hospital with which one could find none to compare—"not one that contains within itself so many advantages for both theoretical and practical study as this New York Hospital." All of which was true. A library of 23,000 volumes and a vast pathological collection facilitated its educational work. Today, affiliated with the



Samuel Bard, M.D.

Cornell University Medical College, it is one of the great medical centers of the world and essentially an educational institution.

Quite in line with its educational pioneering was The New York Hospital's attempt—the first in America—to educate nurses, with which end in view Dr. Valentine Seaman, in 1799, began a course of lectures and practical instruction. Then the Hospital, in 1873, aided in the establishment of the Bellevue Hospital Training School for Nurses. In 1877 it founded its own training school in its new buildings in 15th and 16th streets.

THE record of The New York Hospital in this country's wars—1812, Mexican, Civil, Spanish—is impressive, while in the First and Second World Wars its work here and abroad for the wounded and sick has been unexcelled.

With respect to pestilence, the Hospital has always opened adequate building space and technical service to the victims of the great yellow fever, cholera and typhus visitations of earlier days, and to those of later scourges—infantile paralysis and influenza.

Mental patients have always engaged a large share of the Hospital's activities.

They were first admitted in 1792—the first care of this sort in New York State outside prisons and almshouses. In 1821 Bloomingdale Hospital was established on the present site of Columbia University, but moved to White Plains in 1894. In 1936 the name of the Bloomingdale Hospital was changed to The New York Hospital—Westchester Division. In 1932, the Payne Whitney Psychiatric Clinic was established.

LISTED below are some outstanding events, other than those discussed in the foregoing chronicle, in the history of the New York Hospital:

- 1799 Lying-In Hospital founded.
- 1799 Vaccination introduced in New York.
- 1801 Lying-In Hospital housed in The New York Hospital building.
- 1807 Educational facilities extended to students of the College of Physicians and Surgeons.
- 1816 American Pharmacopoeia issued by The New York Hospital, serving as a standard pending the issuance of the first United States Pharmacopoeia in 1821.
- 1823 New York Nursery and Child's Hospital established—the first children's hospital in America.
- 1824 New York Eye and Ear Infirmary housed by The New York Hospital.
- 1847 Use of ether begun by The New York Hospital.
- 1869 New York University Medical School housed by The New York Hospital.
- 1875 House of Relief established for downtown emergency service in the Chambers Street Police Station.
- 1878 Opened new building on Sixteenth Street, west of Fifth Avenue.
- 1898 Cornell University Medical College founded.
- 1901 Manhattan Maternity and Dispensary incorporated.
- 1907 Convalescent Hospital for Children opened at White Plains.
- 1912 Teaching affiliation with Cornell University Medical College inaugurated.
- 1921 150th anniversary celebrated in Trinity Church, where Dr. Bard had made the address in 1769 proposing the establishment of the Hospital. The Hospital had cared for over 2,000,000 patients during its first 150 years.
- 1927 Payne Whitney bequest for coordination of the Hospital and Cornell

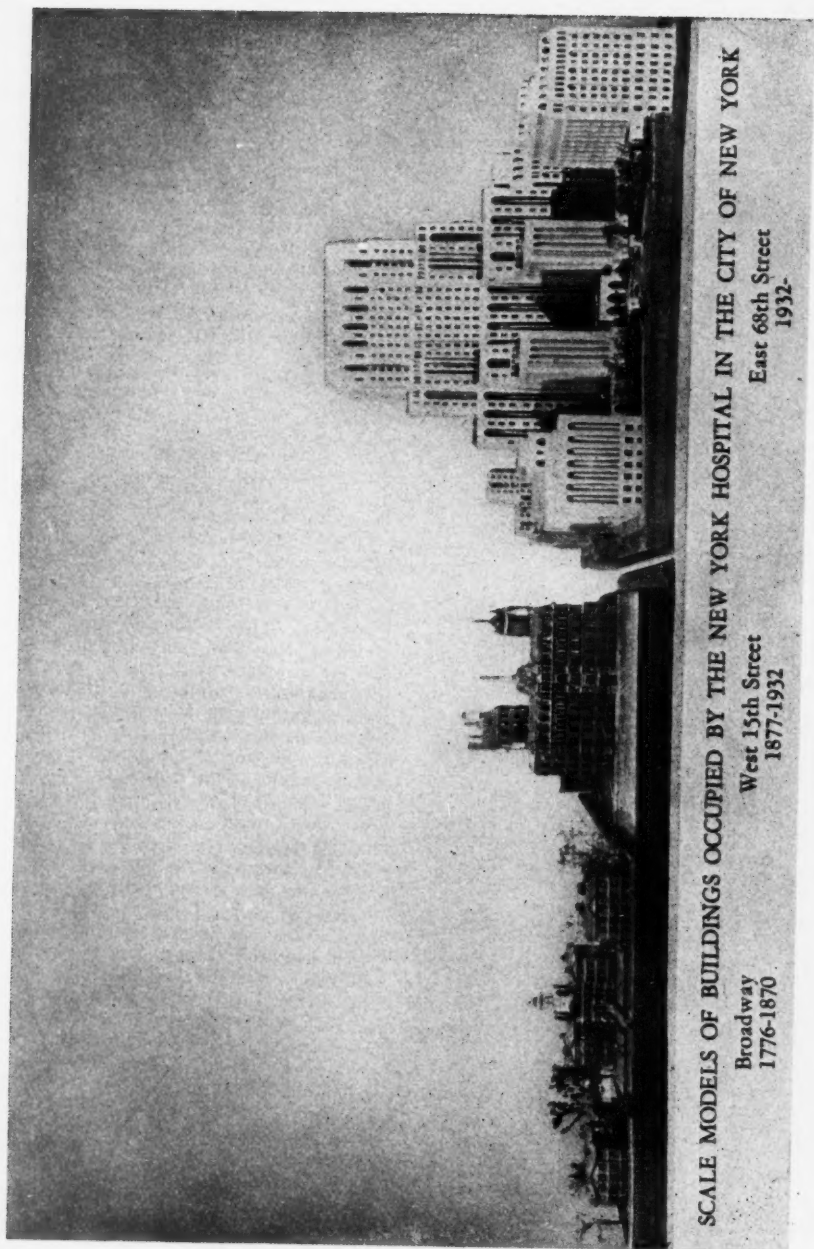
University Medical College as a new medical center.

- 1928 Affiliation of Lying-In Hospital and Manhattan Maternity and Dispensary made with The New York Hospital. Further development of the new center made possible by gifts from J. Pierpont Morgan, George F. Baker, George F. Baker, Jr., the Rockefeller Foundation, and the Laura Spelman Memorial.
- 1932 The New York Hospital and Cornell University Medical College occupied new buildings. The Payne Whitney Psychiatric Clinic established.
- 1935 Medical work of the Nursery and Child's Hospital taken over.
- 1944 The 173rd year of the Hospital's existence.

WE have told how The New York Hospital began its career to the accompaniment of artillery. Again, in 1788, it figured in a dramatic episode signalized by gunfire. This was "the Doctors' Riot," or "the Doctors' Mob."

New York had been the scene of riots before. The first was the Negro Riot, in 1712, and the second the Stamp Act Riot, in 1765. The occasion of the Doctors' Riot was the belief on the part of the populace that graves were being desecrated in order to supply material for the very thorough anatomical and pathological studies conducted at the Hospital. How the feelings of these people were suddenly inflamed into action is told by the *New York Packet* in its issue of April 25, 1788:

"On Sunday, the 13th inst., a number of boys, we are informed, who were playing in the rear of the Hospital, perceived a limb which was imprudently hung out of a window to dry; they immediately informed some persons—a multitude soon collected—entered the Hospital, and in their fury destroyed a number of anatomical preparations; some of which we are told were imported from foreign countries—one or two fresh subjects were also found—all of which were interred the same evening. Several young doctors narrowly escaped the fury of the people; and would inevitably have suffered very seriously had not his honor, the Mayor, the Sheriff and some other persons interfered and rescued them, by lodging them in gaol. The friends to good order hoped

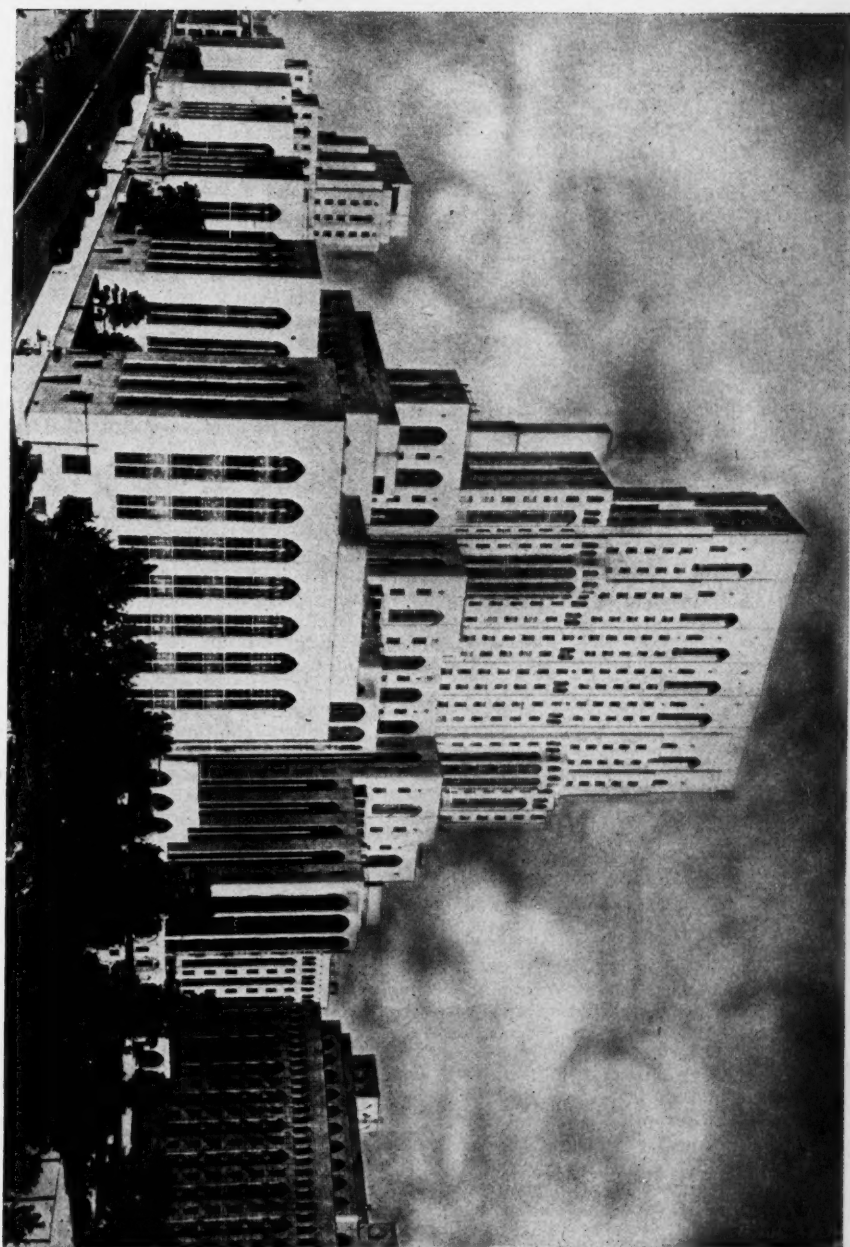


SCALE MODELS OF BUILDINGS OCCUPIED BY THE NEW YORK HOSPITAL IN THE CITY OF NEW YORK

Broadway
1776-1870

West 15th Street
1877-1932

East 68th Street
1932-



The Present New York Hospital
Opened for Patients September 1, 1932
1058 beds

that the affair would end here; but they were unhappily mistaken.

"On Monday morning a number of people collected, and were determined to search the houses of the suspected physicians. His excellency the Governor, His Honor the Chancellor, and His Worship the Mayor, finding that the passions of the people were irritated, went among them and endeavored to dissuade them from committing unnecessary depredations. They addressed the people pathetically, and promised them every satisfaction, which the laws of the country can give. This had considerable effect upon many; who, after examining the houses of the suspected doctors, retired to their homes. But in the afternoon the affair assumed a different aspect. A mob, more fond of riot and confusion than a reliance upon the promises of the Magistrates and obedience to the laws, went to the gaol, and demanded the doctors who were there imprisoned. The Magistrates finding that the mild language of persuasion was of no avail were obliged to order out the militia, to suppress the riot, to maintain the dignity of government, and protect the gaol. A small party of about eighteen armed men assembled at 3 o'clock, and marched thither—the mob permitted them to pass through with no other insult than a few volleys of stones, dirt, etc. Another party of about 12 men, about an hour afterwards, made a similar attempt but having no orders to resist, the mob surrounded them, seized and destroyed their arms. This gave the mob fresh courage—they then endeavored to force the gaol, but were repulsed by a handful of men, who bravely sustained an attack of several hours. They then destroyed the windows of that building with stones, and tore down part of the fence. At dusk another party of armed citizens marched to the relief of the gaol; and as they approached it, the mob huzzaing, began a heavy fire with stones, brick bats, etc. Several of this party were much hurt, and in their own defence were obliged to fire; upon which three or four persons were killed, and a number wounded. The mob shortly after dispersed.

"On Tuesday morning the militia of General Malcolm's Brigade and Col. Bauman's regiment of artillery were ordered out; and a detachment from each were under arms during that day, and the subsequent night. But happily the mob did

not again collect, and the peace of the city is once more restored."

In commenting on the affair, the *Packet* sensibly "wished that our fellow citizens would manifest their zeal against vice and wickedness (as it abounds in the city) which kill men's souls and be less zealous for the preservation of the duller parts."

Our trustworthy medical historian J. G. Mumford states that seven rioters were killed.

The Mayor of the day was James Duane. The Chancellor must have been John Jay, afterward Chief Justice of the United States. The firing on the mob was ordered by old Baron Steuben, of Revolutionary fame, who was himself knocked down in the course of the struggle.

THE suspicions of the mob in this matter do not seem to have been well founded, for affidavits were made by Dr. Richard Bayley, Dr. Charles McKnight and his pupils Ebenezer Graham, John Parker, and George Gillaspay, and also by John Hicks Senior, denying absolutely that there was any ground for the suspicions of the mob. In this case the fierce prejudice against dissection as part of the English heritage fanned an inherent allergy into anaphylaxis.

At any rate, an immediate legislative result was New York's Act of 1789 which declared government to be under obligation not to injure science "by preventing the dissection of proper subjects." This was the first action of the kind by a State, the Massachusetts law of 1784 having been motivated by far different considerations. It must be conceded, however, that Massachusetts, in the early thirties, first enabled the procurement of bodies in adequate numbers by passing a law giving the bodies of paupers dying unclaimed in State institutions to the legally instituted medical schools of the State. The example of Massachusetts was followed by quick action in New York. Before this only the bodies of executed criminals were available, the purpose being punitive and deterrent.

Thus "the Doctors' Riot" may be said to have inaugurated liberal policies with respect to anatomical instruction in America. Such has always been the catalytic effect of The New York Hospital upon all factors coming within its sphere which have directly or indirectly made for medical progress.

CORRESPONDENCE

INJUSTICE TO THE PUBLIC WHO ARE IN NEED OF HOSPITALIZATION AND ILLEGAL DISCRIMINATION AGAINST DOCTORS

To the Editor:—

Never has the doctor's obligation to the public been so universal in scope as at the present time. The public is making greater and greater demands of the medical profession. While the number of people being hospitalized is continuously increasing, it is a fact that many patients are suffering permanent injury—are even dying—because hospital facilities are not available to them all because their physicians have not been invited by a select group of doctors called the "Staff" to become members thereof, whereby they might have access to the services of a well-equipped hospital. In the September issue of *Medical Economics*, page 59, there appeared a résumé of this author's letter to Senator Harry S. Truman which was published in the *Weekly Bulletin* of the Jackson County Medical Society, Kansas City, Mo., July 29, 1944.

The publication of this article brought a rapid fire response from doctors all over the United States. It is from the letter of a specialist in Detroit, Michigan that I quote:

"There can be no argument that the Hospital is the Doctor's workshop and without it he is at a distinct disadvantage in the practice of medicine. The authority that controls hospital privileges, therefore, controls the very destiny of each physician. This power has been used to the advantage of the few against the benefit to the majority."

The destiny of the physician determines the destiny of the patient and the public. Ethics demands that the welfare of the patient must be the first consideration. The welfare of the public demands the best medical and surgical service that the profession can render. In order to render this service to his patients a doctor must have access to any hospital which the patient elects for hospitalization. This privilege is denied to at least ninety per cent of the members of medical societies in the United States because of the practice of "Closed Staffs."

What is a "Closed Staff"? A closed staff is a group of doctors, surgeons, and other specialists who monopolize the sole right to care for all the patients admitted to any one of the hospitals as well as to determine which doctors are eligible for staff membership. After having satisfied all the state's laws for the legal practice of medicine and surgery, if a doctor expects to admit patients under his own name and perform his own surgery, he must file an application with the hospital board who will decide whether he will be accepted as a member of the staff.

He cannot perform surgery on any patient in that hospital without having the approval, endorsement or presence of a regular staff member. Bear in mind that these members of the staff are not voted on by the people, are not approved by the people, or even appointed by any authority elected by, therefore responsible to, the people. In reality they have usurped the state's right to license the practice of medicine.

There are many who deny that such discrimination exists, but this condition is typical not only of Kansas City, Missouri, but of all the United States. From Tulsa, Oklahoma, a doctor writes:

"What you have said in this letter (*Med. Economics*, Sept. 1944, page 59) is true in its entirety and, as a matter of fact, much more could have been said and yet been true. . . . As it stands today, the regular staffs of hospitals throughout the lands set themselves above the law. . . . This is a national wrong that should be remedied."

I quote again from the surgeon of Detroit, Michigan:

"In Michigan, there are hundreds of thousands of industrial workers who carry surgical and hospital benefits. We are supposed to be operating under the American system of the free choice of physicians and free enterprise; but the Blue Cross and other systems of insurances, recognized or sponsored by organized medicine, are

built around the "Closed Staff" principle. No benefits or payments unless the insured is a *bed patient* in a *listed hospital*."

Now just what are the evils of "Closed Staffs" as practiced among our hospitals today?

First—it is not fair to the patient because:

- (1) A patient has more faith and confidence in his own physician than in a specialist, even though the specialist is a member of the hospital staff.
- (2) It denies the patient the right to choose his own physician.
- (3) It is unjust financially. The extra fee of a surgeon just because he is a staff member increases the cost of medical care; therefore, any practice which increases the cost of medical care to the patient is not justified.

Second—It is not fair to the public because:

- (1) No doctor without the convenience and equipment of a good hospital can render as good service to the public.
- (2) It does not promote the practice of good medicine for *all* the people.
- (3) It encourages contract medicine, thus compelling the patient to engage a physician who has made an agreement with his employer instead of with the patient himself.
- (4) It encourages legislation such as the Wagner-Murray Senate Bill, which if passed will add \$12,000,000,000 per year to the annual tax burden.
- (5) Closed staffs encourage the growth of osteopathy and other "short-cuts" to medicine.

Third—It is not fair to the doctor, because:

- (1) It is unethical. The laws of the State recognize his ability to practice medicine by granting him a license, but a few members of his

profession sit in judgment as to the circumstances under which he shall practice.

- (2) He needs the hospital to render his best service.
- (3) He suffers financially. The only persons who profit by the closed staffs are the members themselves.

We shall have to decide whether the evil of closed staffs shall continue or whether we, 90 per cent of the medical profession, shall see many of our patients suffer and die because the other 10 per cent choose to ignore our legal and ethical right to practice medicine for the good of *all* the people and *all* of the doctors. Are we going to allow the evils of the present system to force upon us *Socialized Medicine*? Has not the loudest cry against socialized medicine been that it limits the patient in selecting his own doctor?

Now is the time to *act*. I am convinced that thousands can cite case after case which will reveal the fact that such discrimination by the so-called "CLOSED STAFF" does exist in almost every state in the union.

A peculiar situation exists; of all the doctors who have written to me from different parts of the United States, talked to me over the 'phone and called at my office, everyone recognizes the truth of the situation as herein stated, while there has not been a single doctor who has offered any suggestions or attempted to show why this illegal practice of the closed staff exists.

The kindness of readers will be appreciated if they will write their observations and facts, whether they be for or against the closed staff, sending such data to the following address:

James W. Graham, M.D.
518 Argyle Bldg.
Kansas City, Missouri.

Any information furnished will be held strictly confidential unless otherwise indicated by the writer.

JAMES W. GRAHAM.

Medical Directorship of the Metropolitan Life Insurance Company

DR. Earl C. Bonnett, formerly Associate Medical Director of the Metropolitan Life Insurance Company, has been appointed Medical Director of the company by the Board of Directors, according to an announcement by Frederick H.

Ecker, chairman of the board, and Leroy A. Lincoln, president. Dr. Bonnett succeeds the late Dr. Charles L. Christiennin, who died on October 18th. As head of the Company's medical division, Dr. Bonnett will supervise a staff of about 8,000 physicians who serve as medical examiners for the Metropolitan in the United States and Canada.

CONTEMPORARY PROGRESS

PHYSICAL THERAPY

Early Treatment of Infantile Paralysis

H. E. HIPPS and B. L. CROOK (*Archives of Physical Therapy*, 25:403, July 1944) have employed pool treatment early in the course of poliomyelitis while muscle soreness is still present. One patient was given pool treatment as early as the seventh day after onset; some by the tenth day and many within the first two weeks. The temperature of the pool is kept at 98.6° F. for cases of early poliomyelitis; it is supplied by "flowing hot salt wells." Plaster casts or splints were not used in treating these early cases of poliomyelitis; the only splints employed were supports of stockinet stretched "on the lightest of metal rod or wire frames." These were removed for the pool treatment; a canvas stretcher was used for transporting the patient to the pool; light wooden splints were used in the water, if necessary. In early pool treatment, gentle massage may be given under water from the first day unless the muscle soreness is too intense but otherwise the patient only floats quietly without attempt at movement during the first treatment. In some cases the patient feels that he can move by the second day, while in the pool; if so, assisted active movement of those muscles showing the least sensitivity is permitted; each muscle is moved only once or twice. The underwater massage may be "more extensive." By the third day, the muscle soreness is usually completely relieved, or is only slight, so that muscle reeducation routine may be begun, carefully avoiding any fatigue. A study was made of 88 patients who had had poliomyelitis, for a period of two and a half years. The muscles were tested at frequent intervals, and graded according to the standard grading of normal, good, fair, poor, trace and zero, "with plus and minus for greater accuracy." A comparison of results was made between a group treated by immobilization in plaster casts or otherwise

until muscle soreness had disappeared and a group given early pool treatment; a third group of patients who were not treated in the hospital was used as a control. This latter group showed 31.1 percent improvement in muscle grading during the period of observation; the group treated by immobilization showed 33.8 per cent improvement; the group given early underwater (pool) treatment showed 68.5 per cent improvement. Both the hospital groups were given physical therapy during the period of observation, but the control group was not given such treatment. It was found that muscles that were graded zero, trace, and poor at the beginning of the period of observation showed little tendency to improve with physical therapy; muscles graded poor plus, fair, and good showed considerable improvement. A greater degree of improvement was noted in patients six to sixteen years of age than in either younger or older age groups. The advantages of the early underwater (pool) therapy in this series are that it resulted in twice as much improvement in muscular power as compared with early immobilization; and also that the acute muscular sensitivity was relieved much more promptly, usually within three to five days with the pool treatment. The beneficial psychologic effect of the pool treatment is also noted.

COMMENT

It goes without saying that most people enjoy hydrotherapy. "There is life in the water" is a dictum from earliest times. One takes a bath, if truth were told, as much, or more so, for the exhilaration or sedation as for cleansing purposes. In the medical history of most primitive peoples, it bulks large in therapy and we use today measures inherited from the medicos of those days. For cold, strain, pain or aches, warm wet applications or the warm baths are still the methods of choice.

The Kenny hot fomentations in acute and sub-

acute infantile paralysis are the best we have in therapy, to date, to relieve pain, tenderness and spasm. They make the patient comfortable, give him confidence and help him to help himself. Unfortunately there are but 600 trained technicians in the Kenny treatment to spread over the more than 17000 cases reported in the 1944 epidemic, so modified techniques have to be employed in teaching families to take care of their afflicted and, in these cases, the Public Health nurses trained in orthopedic technique have taken over the job and are doing well under the supervision of wide-awake physicians.

Where Hubbard tubs are available in hospitals, and a sufficiently large staff of nurses or technicians are trained for the work, improvement is soon noted, physically and mentally, but, most important, in the morale of both patients and their families. Do not make the mistake of thinking you have only the patient to deal with; this is the least of your concerns; the child stricken with paralysis (whether 3 or 30 years old) will conform and can usually be reasoned with. But its kith and kin to the nth degree who have read the medical journals edited by the laity, and know more than the entire Faculty of Medicine would dare to promulgate, are right on one's heels with the latest miracles and marvels of results no matter how damaging the spinal cord lesion.

As in the case of any nerve injury, muscles must be kept up to par until such time as the injured nerve fibers recover or those left intact can take over. Active exercise is the proper method of keeping up normal tonus and regaining it when lost. Pain and tenderness, causing fear of movement, restrict activity, which makes for too long periods of rest and consequent atrophy. Warmth, especially wet warmth, relieves pain and tenderness, relaxes muscle spasm and the child may attempt movement. Passive movements are instituted in this period, usually twice daily, with active movements once only for the affected mem-

bers, and a complete range of motion for the rest of the body.

The sooner tub or pool treatment can be instituted the better, as the statistics show in the above article. The temperature is most important. It has been reported that in a certain pool temperatures of 104 and 106 F. are being used. No wonder movement is tried at once in the effort to get away from this scorching heat! Try getting into such a bath sometime if you are perfectly fit, otherwise just dip in a finger or two. Too great heat will

further damage the irritated members; if fever be desired the temperature may be gradually stepped up to tolerance.

Dr. Hipps made a study of 94 sections of old paralysed muscles and found that 50 per cent showed cellular hypertrophy in involved bundles and in the muscles graded poor or better, and that there were no new nor regenerating muscles in any sections. These long paralysed muscles showed atrophy, fatty and fibrous replacement changes, and were weak, especially the fatty replacement type. "The interesting fact that those muscles showing fatty changes were muscles which had been

immobilised or not used for long periods of time" is the final conclusion, and certainly bears out the theory that "prolonged inactivity is harmful and probably induces fatty replacement changes following the atrophy of disuse." Studies were made by Dr. Jessie Wright, of the University of Pittsburgh School of Medicine, of muscle behaviour and the microscopic aspects of muscles recently paralysed by anterior poliomyelitis. The pathologic comparisons between the early paralysed and the old paralysed muscles are important to the last degree.

The conclusions that follow are 1) that uninjured muscle cells can be enlarged and strengthened by exercise, 2) gain in power in the cells is chiefly in those of the muscles of the upper group, mainly in those graded above gravity, 3) conserve and develop the

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muscle cells left and thus prevent atrophy, 4) muscle weakness can be overcome and atrophy and contractures prevented by early underwater treatment and exercise.

M.C.L.McG.

Home-Made Exercise Devices for Physical Therapy

I. J. AMRHEIN (*Physiotherapy Review*, 24:91, May-June, 1944) describes wooden exercise devices that can be used at home, or in hospital wards, or army barracks, thus relieving the physical therapy department of the hospital. A wrist exerciser, an ankle exerciser, and a cone for exercising hand, wrist and fingers have been designed and used. The first two devices were first used as adjuncts to whirlpool treatment, and for this purpose were made of metal. Later the lighter wooden devices were used for "between-treatment exercises" in wards and barracks. The metal wrist exerciser had an adjustable bar to adjust it to any size or shape of wrist; in the wooden device the piece may be cut to fit the individual wrist. The wrist exerciser is designed for active and passive extension of the wrist and fingers, or by reversing the position of the apparatus for flexion with pressure applied to the anterior wrist and the dorsum of the fingers or hand. The angle exerciser makes it possible for the patient to begin assistive, passive, active and resistive exercise before weight bearing is allowed, and assists him in maintaining the range of motion gained in the physiotherapy department by actively exercising atrophied muscles. The cone was originally designed for stretching contractures of the interdigital web of the thumb and forefinger, but it can be used for many other exercises of the hands, fingers and wrists and becomes "a challenge to the ingenuity of the patient." In the 63 patients who have used these devices as indicated, whirlpool baths and diathermy were the primary methods of treatment for sprains and fractures; the exercise devices were used as adjuvants, but definitely shortened the period of recovery to an average of fourteen treatments. Where whirlpool and diathermy treatments are not available (as in Army field operations), these devices are useful as aiding the patients to obtain "an uninterrupted range of motion" in the convalescent period.

COMMENT

The sooner exercise is begun after injury the better. Active exercise, what the patient himself does, is best and this is the great desideratum; however, it may take some time to induce the injured service man to do free active motions. He must be trained, first by passive and assisted motions, then led on to the active assistive and finally the resistive ones which are the best. In all cases of injury, heat, to relax and soften stiffened muscles, best as whirlpool baths or paraffine soaks or from radiant or infrared generators, precedes the exercise. In large, thick areas, deep heat as diathermy, long or short wave, is given. Exercise is much easier under these conditions.

Occupational therapy to train certain affected muscles should accompany physical therapy, simple movements at first, gradually increased, being used to regain power in weak muscles. Helping the man to help himself is the best medicine. This is what "Reconditioning" means in the Army—the whole man is taught to take up life again, to become and remain active, and to get back to his unit once more. If not he will be fitted out to work at his old job if he can, or trained for a new, and often better one, if this can be managed. Anything and everything is grist to the mill of Rehabilitation in all the services and getting back power quickly to injured members is continuously stressed. Hence these various devices to keep exercise going for this purpose make for longer, stronger muscles with greater power. The idea is to keep muscles from atrophying primarily and to teach them old or new skills as needed. Measuring progress helps psychosomatically and sustains interest.

Many of these devices were invented by the physicians who must ever be alert to change, adjust, improve, as motion is restored. The old Zander apparatus, generally now discarded, could be used for training to great advantage. Directly physical therapy and occupational therapy have reached their maximum of improvement, work therapy should be instituted—the service work if the man is returning to service; if not, work therapy that will mean new skills and new fitness for the job that should be awaiting him in civilian life.

M.C.L.McG.

Induced Resistance to Prolonged Sun Exposure

J. L. RUDD (*Archives of Physical Therapy*, 21:345, June 1944) notes that in spite of "the healthful aspects of the sun's rays," these rays may have a definitely harmful effect. They may cause a more severe type of burn than the ordinary sunburn, often accompanied by

general malaise, weakness, dizziness, headache, nausea, vomiting and fever. Some persons do not develop a tan or a relative resistance to the sun's rays; others are unable to take the time for graduated exposure. Redheads, blonds and other persons with a thin, sensitive epidermis are most liable to injury from exposure to the sun. In the author's work with artificial ultraviolet light therapy, patients who had been treated often noted that they could stay out in the sun longer without ill effect than before they had received treatment. This suggested the possibility of increasing resistance to prolonged sun exposure by the use of small graduated doses of artificial ultraviolet light irradiation. Such protection would be especially important to persons with light, tender skin whose occupation would require prolonged sun exposure; and to service men "fighting a global war." Either the hot or the cold quartz mercury vapor lamp may be used for such treatments. The harmful effects of the sun's rays are due particularly to the ultraviolet band of the sun's spectrum at approximately 290 to 320 millimicrons; 28 per cent of the hot quartz lamp rays are in the ultraviolet range, and about 55 per cent of the rays of the cold quartz lamp are in this range. The usual beginning dose with the hot quartz lamp is twenty to thirty seconds at a distance of 36 inches, the time being increased gradually, according to the reaction produced. By reducing the distance, the time of exposure may be shortened according to the law of inverse squares. Three illustrative cases are reported in which such graduated exposures greatly increased the patient's resistance to the sun's rays; 2 of these patients "volunteered the information that they had been free of colds since taking treatment." The author considers that further study of this method is indicated, especially in view of its importance to men in the service.

COMMENT

Exposure to direct sunlight without preparation may be a most harmful procedure. Heliotherapy is one of our best measures for keeping fit but it may also be one of the surest methods of causing harm. Depending upon the skin bequeathed us by an ancestry more or less exposed to the sun, wind and weather of varying climes we will react to the sun's rays well or ill. The thin, sensitive skin of the blond or the pallid dark-haired or the red-head will react differently to that of the swarthy, olive, thicker-skinned type whose ancestral epidermis received the hot

infrared rays hours on end and survived to hand on this tolerance.

The Fourth of July week-ender or the two-weeks vacationer early in July, who allows his skin to be scorched by lying in the hot sun for hours and comes home to bed to recover from his too great devotion to Apollo, is known to us all—insolation weakens him but rarely teaches him a lesson. "Everybody is doing it and everybody believes in it," "The experts in the newspapers and magazines all recommend it," "Doctors say, 'get plenty of sunshine,'" "All my friends look wonderful, they have such a good tan and they are so healthy," etc, ad nauseam. So they rattle on, rather taking one to task for daring to go counter to the accepted dictum.

Those going South for the first time commit the same crimes against their bodies in the effort to look like an Amerind or mulatto or Mediterranean boatman. They look incredulous when told that those constantly exposed to sunlight, if the skin be thin and sensitive, may develop skin cancers. They have been reading up the latest literature (?) on how to become glamour girls or he-men, able to withstand all disease, by lying on an unprotected beach or roaming semi-naked the hills and mountains.

The best way to build up resistance is to gradually expose the body as suggested by Rollier of Leysin, Switzerland, who counselled acclimatisation for at least three weeks before exposure. After this period, if sensitive or weak, the feet are exposed for 5 minutes, increasing this to 10 minutes the next day and the legs for 5 minutes, the feet for 15 minutes, legs 10 and thighs 5 minutes, continuing this ratio on sunny days until the entire body has been exposed. In healthy young adults, the get-there-quick method is more often employed, exposure of the whole body front and back for 5 minutes the first day, 10 minutes the second day and so on till the whole body is exposed for 35 to 40 minutes when the sun is not hot. The best time is from dawn to ten a.m. and from 5 to dusk, w.t.

Any sign of erythema, itching, nervousness, insomnia, will call for immediate cessation of the treatment until recovery, and then longer intervals are substituted and the time of exposure reduced. It is the small, suberythema dose that builds up resistance. When a tan has been acquired there is no further absorption of the rays' benefits. Nature gives a tan to prevent damage to the skin and structures beneath it, thus preventing excess stimulation of the organism with insolation and eventual fatigue and exhaustion.

The ordinary person whose time is more valuable than his health and well-being will have none of this. For him the quicker the method the better, so we can prepare him in the dark months of the year by ultraviolet radiation from generators, but the same precautions must be taken lest he too succumb

to over stimulation with its depressive sequelae. Suberythema doses of minutes or seconds are the rule with this method.

The erythema dose is usually considered as 30 seconds at 30 inches in a new burner. The older the burner the longer the time and/or the nearer the source. Test the skin which is not usually exposed to judge the effect. Increase by $\frac{1}{2}$ to 1 minute depending on the effect—erythema, itchiness, irritability, nervousness, etc.—preferably every other day for 10 days. Abstain for 1 week to 10 days and repeat if all goes well. After several such courses through the winter, one is ready for the spring and summer and can usually take them in one's stride with a feeling of well-being and no fear of ill effects from the sun, if careful. Many volunteer the information they have no ill effects from exposure nor the usual colds they had had previously. Temperance in all things as always.

Going out in the middle of the day is taboo. Beatrice Lillie's song based on an aphorism of the East, so popular several seasons ago, expresses what may be expected—"Only mad dogs and Englishmen go out in the midday sun." Ultraviolet radiation, natural or artificial, has an especial affinity for the brain and the optic nerve, and so the eyes must be protected always. Conjunctivitis and finally cataract are ever present dangers from too long exposure.

Men in service are especially exposed and especially need preparation dosage. Herpes, urticaria, papules and vesicles are the skin lesions they suffer from and these may go on to the so-called "desert sore", an ulceration. Continued severe sunburn may find them with marked keratoses. Submarine crews, stokers on ships and those away from sun for a long time must be especially careful of sudden and/or prolonged exposure. A latent or silent tuberculous lesion may be activated, so examinations must be insisted upon and treatment instituted with great caution if at all.

M.C.L.McG.

New Approach to the Problem of Incipient and Recurrent Malaria, Preliminary Report

G. E. DREWYER and J. E. HUGHES (*Archives of Physical Therapy*, 25:273, May 1944) describe a method of combined artificial fever and quinine therapy in cases of latent or "incipient" and recurrent malaria, in patients previously exposed to infection. Their work was carried out at the U. S. Naval Convalescent Hospital at Glenwood Springs, Colo., where there is a natural hot vapor cave, heated by a hot mineral water spring. The temperature in the cave varies from 102 to 110° F. with a humidity of 87 to 93 per cent; the cave is so large that about

20 patients can be treated at a time. In cases of latent or recurrent malaria, before typical symptoms develop, there is often tenderness in the splenic region sometimes associated with enlargement of the spleen. Treatment in the hot vapor cave was given for a total of twenty minutes, in three periods, the first ten minutes, the second, seven minutes, the third, three minutes with a three-minute rest between each period. The average rise in oral temperature was 2 to 3.4° F. After the treatment, the patient was wrapped in a sheet and wool blanket and allowed to cool off gradually for half an hour. When a malarial paroxysm was initiated and the plasmodium appeared in the blood, treatment with quinine sulfate was begun (36 grains daily in three divided doses); this is continued until the patient has been afebrile for five days, and the blood smear is negative for malarial parasites. Five more fever treatments are then given, and during this time quinine is continued in the same dosage. Six more fever treatments are given after the quinine has been stopped. In the 26 cases of latent or recurrent malaria treated by this method, there has been no recurrence of symptoms following the combined fever and quinine treatment. In this combined treatment, the fever therapy results in general capillary dilatation and an increase in the circulatory rate of the blood and in the cardiac output. Thus the "dormant" plasmodia in the spleen and other organs are brought into the circulation where they can be "directly acted upon" by the quinine. If further observation establishes the value of this method of treatment in incipient and recurrent malaria, it will be of definite aid in solving the problem of malarial control. Other forms of fever therapy can be employed; the ordinary hyperthermia in use in hospitals can be used as an equally effective method of inducing hyperpyrexia in such cases.

COMMENT

Glenwood Springs, Colorado, is 5740 feet above sea level in a cave in the mountainside, and was used by local Indians to cure various ills. A slight polycythemia is present at this height and it too may play a role in the physiologic picture. With the rise of oral temperature of 2 to 3.4 F, there is general capillary dilatation with increase in the circulatory rate and cardiac output, increase in blood velocity and slight gradual increase in

blood volume as demonstrated by Bazett in 1938. The increased number of red blood cells is from the spleen.

This condition is favourable to the discharge of the red blood cells with the malarial plasmodium into the peripheral circulation and a consequent paroxysm within 24 to 96 hours. The patient frequently complains of splenic tenderness preceding the attack and this may or may not be associated with splenic enlargement. It must be noted, however, that frequent recurrences of malaria can appear where the spleen has been removed, so stagnant capillary beds are present

in the liver and other organs. The spleen was definitely palpable from 1 to 6 cm. below the left costal margin in those cases where the paroxysm was induced. It had returned to normal size with no tenderness on discharge to duty.

With the report that 1,000,000 carriers of malaria will be eventually returned to their homes, should this method continue to give favourable results, we will be spurred to give it a trial and thus find another use for fever and an additional aid in our work.

M.C.L.McG.

PUBLIC HEALTH, INDUSTRIAL MEDICINE AND SOCIAL HYGIENE

Multiple Antigens for Active Immunization

W. E. BUNNY, Secretary of the Study Committee of Multiple Antigens, A. P. H. A. (*American Journal of Public Health*, 34:452, May 1944) reports the findings of the Committee. The use of combined antigens, even though such combinations are "immunologically feasible," is not indicated unless there are definite justifiable reasons for establishing immunity with each antigen, i. e., risk of exposure to infection in normal civilian life, in certain occupations, or in special social conditions (as, for instance, inmates of institutions). Before combining antigens, the effect of such combination on the potency of each antigen must be determined; combinations that cause destruction or deterioration of any one antigen are not suitable for use. Non-living antigens combined with alum have been found to be better immunizing agents than non-living antigens in plain diluents. Immunization against scarlet fever as a routine or "community-wide" public health practice is not recommended at the present time with the antigens available. Immunization of children against pertussis, vaccine, diphtheria and tetanus toxoids may be employed singly or in combination, except that a pertussis-tetanus combination is not recommended. Smallpox vaccine must always be given alone. Diphtheria immunization with plain or alum precipitated toxoid is recommended for all children in the pre-school age, preferably at six to twelve months of age, with "repeat" or "booster" doses at the time of school entrance or earlier if necessary. Children not immunized against

diphtheria before admission to school should be immunized without preliminary Schick tests. Older children or adults, who are Schick-positive, should be immunized as indicated. Pertussis vaccine should be given children six to twelve months of age; the use of pertussis vaccine in older children is of less value as a public health measure and the value of repeat or booster doses at the time of school entrance has also not been established. Administration of tetanus toxoid to children of pre-school age is not recommended as a routine, but it may be given in combination with diphtheria toxoid. Tetanus toxoid may be given at any age when the environmental conditions (occupation or otherwise) "demand immunity". The best time for the repeat dose of tetanus toxoid has not yet been definitely established; but present indications are that a booster dose should be given within a year and that a "repeat booster dose" at the time of injury, if within five years, will give satisfactory immunity. Vaccination against smallpox should be done before three months of age, or as soon after that age as possible and repeated on entrance to school, and at five-year intervals "as far as practicable," and always on exposure to an active case of smallpox. Antigens to give protection against special hazards may be given singly or in combination, as indicated.

COMMENT

The use of multiple antigens is not recommended with the exception of diphtheria-tetanus toxoid. Vaccination for smallpox should be uncomplicated by other preventive treatments.

E.G.B.

The Rapidity of Antitoxin Response to a Recall Dose of Diphtheria Toxoid

F. O. WISHART and associates (*Canadian Public Health Journal*, 35:276, July 1944) report a study of the antitoxin response to a "recall" dose of diphtheria toxoid in 12 young adults who had previously had a course of toxoid injections. The antitoxin titer of the blood just previous to the administration of the recall dose of toxoid was determined; repeated determinations of antitoxin titer were made in each case daily on the second to the seventh day, on the eleventh and nineteenth day, and at five, twelve and twenty-four months. The recall dose of toxoid was 0.1 cc. fluid toxoid given subcutaneously. The earliest increase in antitoxin titer was observed on the fourth day after the recall dose (in 2 individuals); by the seventh day all showed a definite increase in antitoxin titer. The maximum antitoxin titer occurred on the eleventh day in the majority (9 of the 12 tested). The highest level of antitoxin titer was obtained in the subjects showing the most severe local reaction to the toxoid injection. As in diphtheria the incubation period is short (two to five days), and as a definite rise in antitoxin titer was not observed until the fourth day in the subjects studied, the authors conclude that a "recall" dose of toxoid after exposure to infection in previously immunized individuals would not prevent the development of diphtheria. It might "quite possibly" result in a mild attack of the disease.

COMMENT

A "recall" or "booster" dose of diphtheria toxoid is not indicated upon exposure since immunity will not develop within the incubation period. The importance of a "recall" or "booster" injection within a reasonable period of not to exceed five years after first injections is emphasized by this research.

E.G.B.

Three Deaths from TNT (Trinitrotoluene) Poisoning

W. D. McNALLY (*Industrial Medicine*, 13:491, June 1944) reports 3 deaths from trinitrotoluene poisoning in men who had handled TNT for several months. Fatal cases of trinitrotoluene poisoning, the author notes, are very rare owing to the preventive methods carried out by indus-

trial physicians and engineers, although "thousands of cases" of dermatitis occur in ordnance plants. Trinitrotoluene may be absorbed through the skin, lungs, or gastrointestinal tract, but in industry the skin is undoubtedly the chief portal of entry. The most serious effect of trinitrotoluene poisoning is hepatitis; when toxic jaundice develops as a result of hepatitis, recovery is "exceptional." In one of the cases reported, the patient had a severe hemorrhage from the nose and mouth after leaving work and developed petechiae on the face, arms and neck. In this case and in one of the other 2 cases in which blood counts were made there was a definite anemia. A chemical study of tissues removed at autopsy in these cases did not show the presence of trinitrotoluene. The most striking pathological findings were in the liver, which was reduced to one-half its normal weight and which showed in each case slightly elevated "gamboge-colored" areas on its outer surface. It is these areas that are typical of TNT poisoning.

COMMENT

With the great increase in TNT handling apparently industrial sanitation methods have been effective in preventing deaths from trinitrotoluene poisoning in spite of many cases of dermatitis.

E.G.B.

Carbon Tetrachloride Poisoning

B. E. KONWALER and C. B. NOYES, JR., (*California and Western Medicine*, 61:16, July 1944) report 3 cases of carbon tetrachloride poisoning in men engaged in cleaning machinery with rags soaked in carbon tetrachloride in a poorly ventilated compartment. The dangers of the use of carbon tetrachloride as a solvent or a cleaner have long been recognized in industrial medicine, and as the production and use of carbon tetrachloride have increased, the number of cases of poisoning due to exposure to it have also increased. Observations by others have shown that consumption of alcohol has a definite "synergistic role" in increasing the toxicity of carbon tetrachloride. In all the 3 cases reported, the men had "drank heavily" over the weekend preceding their going to work. Three other men working with them, who had not been drinking, showed no symptoms. The 3 cases reported varied in severity. Nausea, vomiting and epigastric pain occurred in all; one patient re-

covered in a few days and returned to duty. Another developed typical symptoms of acute nephritis with uremia, and showed an increase in the icterus index but without visible jaundice; he completely recovered in two months. The third patient had symptoms of severe nephritis with rise in blood pressure, and also showed an increased icterus index without jaundice; he died "rather suddenly" eleven days after the onset of symptoms. Autopsy showed changes in the kidney typical of toxic nephrosis, and focal necrosis in the liver, mainly peripheral. The evidence in this case and other fatal cases indicates that carbon tetrachloride should be considered as "a renal poison equivalent, in importance, to mercury."

COMMENT

The combination of poor ventilation and alcohol with carbon tetrachloride is dangerous. Both are preventable through the use of common sense; primarily, ventilation is an industrial responsibility.

E.G.B.

Gonococcus Cultures—A State Laboratory Service

M. W. HIGGINBOTHAM (*American Journal of Public Health*, 34:643, June 1944) reports that the Minnesota State Department of Health has maintained a service for making gonococcus cultures of specimens sent in from venereal disease clinics and by private physicians for four years. An inexpensive medium that will keep on storage at room temperature is

used for shipping the specimens. Solid media have been used for the laboratory cultures. As in Minnesota specimens can usually be delivered to the laboratory for culture in eighteen to twenty-four hours, a comparison has been made of the results obtained with immediate cultures, cultures after a twenty-to-twenty-six hour interval, and smears in 1,392 specimens. With immediate cultures, 170 specimens gave positive results after shipment (twenty to twenty-six hour interval). Smears were positive, however, in only 54 cases. The immediate cultures were negative in 3 cases in which the smears were positive, and positive in 119 cases in which the smears were negative; both immediate cultures and smears were positive in 51 cases. In the shipped specimens, 80 gave positive cultures, against the 54 positive smears. These cultures "missed" 25 specimens in which the smears were positive, but gave positive results in 51 cases in which the smears were negative. Both cultures and smears were positive in 29 specimens. Using both delayed cultures and smears the number of positives (105) was almost twice that obtained with smears alone (54).

COMMENT

In the absence of laboratory facilities for immediate cultures, the culturing of shipped specimens is preferable to immediate direct smear examination. Both should be routinely carried out on shipped specimens.

E.G.B.

OPHTHALMOLOGY

Studies on the Distribution of Penicillin in the Eye and Its Clinical Application

G. C. STRUBLE and J. G. BELLOWS (*Journal of the American Medical Association*, 125:685, July 8, 1944) found in animal experiments that if large doses of penicillin were injected intravenously, penicillin could be detected in the tissues of the eye within fifteen minutes. The concentration of penicillin was highest in the extra-ocular muscles, then (in decreasing order) in the sclera, conjunctiva, tears, chorioretinal layer, aqueous humor, vitreous and cornea. In the extra-ocular muscles, the greatest concentration of penicillin was found in fifteen minutes after the

intravenous injection, after which the concentration decreased "precipitously." In the aqueous humor and in the less vascular tissues such as the conjunctiva and sclera, the concentration of penicillin showed an initial sharp increase in the first fifteen minutes, then increased slowly until the end of the first hour. Not more than a trace of penicillin was found in any of the ocular tissues at the end of three hours. When penicillin was given intravenously or intramuscularly in amounts "comparable to therapeutic doses," penicillin was not detected in the ocular tissues except in two specimens, and then only a trace was found. After the subconjunctival injection of a solution of penicillin containing 2,500 units

per cc., penicillin was found in the cornea, iris with ciliary body, conjunctiva and sclera in high and "even enormous" concentration; and in moderate amounts in the aqueous and vitreous humors. Topical application of penicillin in a solution containing 20,000 units per cc., by means of a constant corneal bath, gave similar results except that concentrations were higher in the aqueous humor, cornea, vitreous humor and iris with ciliary body and lower in the conjunctiva and sclera. These findings indicate that topical application of penicillin would be more effective than parenteral administration in the treatment of infections involving the conjunctiva, cornea, sclera, anterior chamber, iris with ciliary body and vitreous. Thirteen cases of external ocular infections are reported in which penicillin "drops" (200 to 2500 units per cc.) were used; in all these cases the response was rapid; in some of the more acute infections cure was obtained in twenty-four hours. Only 3 cases of deep seated ocular infections were treated by intravenous or intramuscular injection of penicillin in large doses; little or no improvement was obtained in these cases.

COMMENT

This article points out the possibilities of local use of penicillin which has but recently been available for use in this country. The work done by these contributors is most welcome and will encourage similar trials everywhere.

R.I.L.

The Use of Tyrothricin, a Bacterial Extract, in the Treatment of Marginal Ulcers of the Cornea

S. BLOOMFIELD (*American Journal of Ophthalmology*, 27:500, May 1944) reports the use of tyrothricin in the treatment of marginal ulcers of the cornea resistant to other methods of therapy. Tyrothricin is prepared from cultures of *Bacillus brevis*. Tyrothricin is not soluble in water or body fluids, and is poorly diffusible; because of these properties, and also because it has a toxic component (tyrocidine), it is not used systemically. But in small dosage it is safe and highly effective for topical application against gram-positive organisms. The most frequent type of marginal ulcer of the cornea is associated with the more severe forms of catarrhal conjunctivitis; such corneal

ulcers usually heal promptly when the conjunctivitis is effectively treated with any of the usual antiseptics, sometimes supplemented by cauterization of the corneal lesion. Marginal corneal ulcers occur, however, especially in elderly persons, without any associated conjunctival inflammation. Such superficial ulcers are sometimes successfully treated with antiseptic applications or cauterization and pressure dressings; but sometimes they are resistant to such therapeutic measures. In such resistant cases, the author has recently found tyrothricin effective. An alcoholic solution of tyrothricin was suspended in distilled water in a concentration of 0.2 mg. per cc. Tyrothricin was also prepared in an ointment in a petrolatum-lanolin base in the same 1:5000 concentration. These preparations proved non-irritating to the eyes of experimental animals and normal human volunteers, and have since been used in "numerous cases." Four cases of marginal ulcer of the cornea resistant to other forms of treatment are reported, in which healing occurred rapidly under treatment by frequent instillations of the tyrothricin suspensions (every three hours during the day), supplemented in 2 cases by application of the tyrothricin ointment at night.

COMMENT

Marginal ulcers in older patients are often stubborn and recur without apparent explanation. Any therapy offering the slightest superiority over what we now have deserves thorough trial. The element of vascular degeneration cannot be forgotten.

R.I.L.

Keratectomies for Treatment of Corneal Opacities

RAMÓN CASTROVIEJO (*Archives of Ophthalmology*, 32:11, July 1944) has found that corneal transplantation gives the best results as far as vision is concerned when the opacity covers the pupillary area, but not all types of opacity, even in this area, are suitable for this operation. He describes seven types of partial or total keratectomy, including three types of partial superficial keratectomy for band keratitis, for opacities associated with corneal dystrophy and for leukoma involving a limited area of the superficial cornea (following infection or trauma). In more extensive vascularized

leukoma, a total superficial keratectomy is done; if symblepharon is present, this is combined with a corneoconjunctival plastic operation. In still more extensive leukoma with symblepharon, a partial superficial keratectomy is done combined with a corneoconjunctival plastic operation and a graft of buccal mucous membrane to cover the defect in the eyeball. A buccal mucous membrane graft is also employed after partial superficial keratectomy for the treatment of recurrent pterygium. Most of these operations can be done under either general or local anesthesia, but in the operations for leukoma with symblepharon in which a corneoconjunctival plastic operation is done, the author employs general anesthesia. Penicillin ointment has been used as a postoperative dressing to prevent infection and has been found to shorten the period of healing.

COMMENT

This is a limited but very important field. There are few places where the facilities and number of cases have permitted sound judgments as to the procedure and the types of cases which offer results. The author is one of the pioneers in this type of eye surgery and his work interests the profession and stimulates similar work in other eye hospitals.

R.I.L.

Evaluation of Ocular Angiospasm

S. R. Gifford (*Archives of Ophthalmology*, 31:453, June 1944) has previously reported a study of 8 cases of central angiospastic retinopathy, involving chiefly the area of the macula, with sudden reduction of central vision. He has since seen 23 other cases of the same type. The study of both series of patients including careful examination of the peripheral vascular system indicated that peripheral angiospasm is the cause of this type of angiospastic retinopathy. It was found in these cases that treatment with antispasmodics resulted in healing of the retinal lesion and definite improvement in vision. Complete abstinence from tobacco was enforced on beginning treatment and patients were protected against cold. In the acute stage, papaverine hydrochloride was given by intravenous injections, $\frac{1}{2}$ grain (0.032 gm.) twice daily for several days; then $\frac{1}{2}$ grain was given by mouth three times a day for one or two weeks. In some cases intravenous injections of typhoid vaccine were given for the vaso-

dilating effect; small doses of 10 to 20 million organisms were employed. A hypnotic, phenobarbital, either alone or in combination with a diuretic (theobromine), was given in doses of $\frac{1}{2}$ grain three times a day for several months. In some cases an insulin-free pancreatic extract was given intramuscularly (1 cc. twice a week for fourteen injections), repeated if indicated. The nitrates were tried in some cases, but did not prove as effective as papaverine and the barbiturates. In some cases administration of neostigmine bromide, a parasympathomimetic drug, had a favorable effect. Nicotinic acid, either as vitamin B complex or in pure form, was given in a dose of 150 mg. daily; this had a specially favorable effect on the capillaries. A diet was advised containing calcium and all the essential vitamins with supplements of vitamin C and vitamin B complex if necessary. Thyroid was given to 5 patients with low basal metabolism; and estrogens to a few women with menstrual disturbances. Avoidance of excessive fatigue and nervous strain was advised and the resumption of the use of tobacco at any time was prohibited.

COMMENT

This is one of Dr. Gifford's last contributions before his untimely death. The prognosis in these cases has not been good and his work is original and valuable. From the nature of the disease, the pathology must be established before we can offer these patients more than they had in the past.

R.I.L.

Treatment of Hypopyon Ulcers with Albucid and Proflavine

P. D. TREVOR-ROPER (*British Journal of Ophthalmology*, 28:181, April 1944) reports the treatment of 12 cases of hypopyon ulcer with albucid and 12 with proflavine. These patients were treated in the hospital, and albucid in 30 per cent solution was instilled into the eye hourly by day and applied as 10 per cent ointment every four hours by night. Proflavine has been found to be bactericidal in high dilution, and less irritating to the tissues than other flavine derivatives; the author is of the opinion that when "the optimum vehicles and concentrations" of proflavine have been determined it will be of definite value in the treatment of super-

ficial eye infections. In 3 of each of the series of 12 cases of hypopyon ulcer Saemisch section was required, all of these patients being over sixty years of age and 2 in the eighties. In all the other cases in both the albucid and proflavine series, the pain was relieved within a few days; the hypopyon cleared more readily in the proflavine series, in an average of two days, as compared with five days or longer in the albucid series. The clearance of the hypopyon is not an entirely satisfactory criterion of the efficacy of treatment, but it is sometimes the only practicable criterion if patients must be discharged from

the hospital before healing of the ulcer is complete.

COMMENT

Hypopyon keratitis in the advanced stages is such a serious matter that any result short of loss of the eye is a triumph. The sulpha drugs have done much for these cases but they must be used early if useful vision is to be retained. Conditions in England have been so abnormal that ideal treatment and care have been impossible. Eye injuries have been severe and contaminated from the first. The patients have borne their suffering heroically and the medical men have given service far above and beyond what had been expected of human beings.

R.I.L.



Medical Meetings at Fort Hamilton

FOR the past year monthly medical meetings have been held at Fort Hamilton, New York, under the supervi-

sion of Colonel Minor F. Felch, M. C. All medical officers stationed at Fort Hamilton and in the nearby vicinity are invited to attend.

**"Flowers leave part of their
fragrance in the hand that
bestows them."**

Ancient Chinese Proverb



THIS FORM MAY BE USED AS A CLAUSE
IN, OR A CODICIL TO, YOUR WILL:

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Medical BOOK NEWS

Edited by

ALFRED E. SHIPLEY, M.D., Dr. P.H.

All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, 16, N. Y.



PIERRE CARL EDOUARD POTAIN
1825-1901

Classical Quotations

● There is, however, a variety of vascular murmur the clinical value of which appears somewhat more positive and which seems to be connected more directly with hydremic alteration; it is the musical form of this murmur.

Pierre Carl Edouard Potain

On the Movements and Sounds that Take Place in the Jugular veins, *Bull. et Mem. de la Soc. med. des Hop. de Paris* 4:327, 1867, 2e Serie.

Keeping Fit

Health for the Having. A Handbook for Physical Fitness. By William R. P. Emerson, M.D. New York, The Macmillan Company, [c. 1944]. 146 pages. 12mo. Cloth, \$1.75.

THIS handbook is designed to give information on physical fitness to the layman. Certainly the average individual knows very little about his physical make-up and what to do to keep "above par."

The author, qualified in the fields of health examinations and nutrition, shows in this well-written booklet how to keep fit.

ALFRED E. SHIPLEY

"Nerves"

The Answer Is . . . Your Nerves. By Arnold S. Jackson, M.D. Madison, Wis., Jackson Publications, (Kilgore Printing Company), [c. 1942]. 197 pages, illustrated. 12mo. Cloth, \$2.00.

THIS is a volume prepared for the lay public. It is far superior to many similar publications, and many physicians would do well to read this book.

A. M. RABINER

History of Syphilis

Notable Contributors to the Knowledge of Syphilis. By Herman Goodman, M.D. New York, Froben Press, [c. 1943]. 144 pages, illustrated. 8vo. Cloth, \$3.00.

INTO a book of 144 pages Dr. Goodman has packed brief notes upon the contribution of over 700 persons to the knowledge of syphilis; small illustrations of 143 of the contributors are also included. No attempt is made to appraise the value of the work of each contributor. Although the work must make its greatest appeal to the medical historian, the average reader will find much to entertain him in the pithy data which comprise the bulk of the book.

ARTHUR W. GRACE

Translation of Arthus' Essay

Philosophy of Scientific Investigation. Preface to "De L'anaphylaxie A L'immunité," Paris, 1921. By Maurice Arthus. Translated from the French by Henry E. Sigerist. Baltimore, The Johns Hopkins Press, [c. 1943]. 26 pages. 4to. Board, 75c.

THE Johns Hopkins Press deserves much credit for publishing the translation by Henry E. Sigerist of Maurice Arthus' *Philosophy of Scientific Investigation*. This address by a physiologist whose work in the field of anaphylaxis has been particularly noteworthy, is both intimate and charming as Dr. Longcope points out in his foreword.

Arthus was greatly influenced by Claude Bernard and this short essay shows clearly the imprint of that master. Nevertheless, it has a dignity and simplicity all its own and will prove a source of encouragement to all those who stand on the threshold of a career in the experimental sciences.

MILTON PLOTZ

Worry

Stop Worrying and Get Well. By Edward Podolsky, M.D. New York, Bernard Ackerman, Inc., [c. 1944]. 124 pages, 8vo. Cloth, \$2.00.

THIS timely publication is in keeping with the renewed accent upon psychosomatic medicine. Although this concept is by no means new, yet the all-too-fre-

quent forgetting of the integration concept has made for inadequate medical practice which opened the door to various types of quackery.

Dr. Podolsky, with the aid of thumb-nail case histories, strikingly demonstrates the disguised role in which emotions may reveal themselves through various types of "body protests" to mental stress and strain. The author chooses to emphasize, largely by way of example because of its importance, how the arch-demon, *Worry*; is number one enemy to present high-pressure living in a world torn by war.

The nurse, medical student, general practitioner, social worker, psychologist, and intelligent layman may all significantly profit by this important contribution which activates recognition of this field of medical practice whereby emotionally-laden mental conflicts may be revealed in such ways as skin eruptions, hypertension, rheumatism, ulcers, chronic invalidism, and various psychoneurotic symptoms.

FREDERICK L. PATRY

Nervousness

Release from Nervous Tension. By David Harold Fink, M.D. New York, Simon and Schuster, [c. 1943]. 232 pages. 8vo. Cloth, \$2.00.

THIS little book has in it some really good features and suggestions. Whether it in itself can help a patient is a moot question, but it would be fair to say that it is a valuable adjunct to the general practitioner in handling a nervous patient. The getup is interesting and logical, and the reading is easy. This book is recommended.

S. R. SLATER

Clinics

Clinics. Vol. II, February, 1944. No. 5. Edited by George Morris Piersol, M.D. Philadelphia, J. B. Lippincott Company, [c. 1944]. 266 pages, illustrated 8 vo. Published Bi-Monthly, Paper, \$12.00 by subscription, \$2.00, single copy. Cloth, \$16.00 by subscription, \$3.00, single copy.

THE standard of "Clinics" continues high with this number on War Medicine. One of the best sections is a panel discussion with questions from the audience on chemotherapy. A number of very significant points are raised and answered by the panel board. Bock has a good section on Fatigue while Rankin covers war wounds and burns in a very sound section. The volume is worth keeping up with, for it is good.

A. M. BABEY

Sterility in Male and Female

Fertility in Women, Causes, Diagnosis and Treatment of Impaired Fertility. By Samuel L. Siegler, M.D. Philadelphia, J. B. Lippincott Co., [c. 1944]. 450 pages, illustrated. 8vo. Cloth, \$4.50. With succeeding work, \$8.00 set.

Fertility in Men. A Clinical Study of the Causes, Diagnosis and Treatment of Impaired Fertility in Men. By Robert Sherman Hotchkiss, M.D. Philadelphia, J. B. Lippincott Co., [c. 1944]. 216 pages, illustrated. 8vo. Cloth, \$3.50.

THE simultaneous publication of these books, and their joint appearance in a case is evidence that sterility is a gynecological problem, even though in nearly one-half of the cases the fault is the male's.

Dr. Siegler's book is a comprehensive text for the gynecologist. Its illustrations and charts are excellent, and the text is clear, practical and thoughtful. Obviously endocrine factors are important, complicated and difficult to separate, yet no extravagant claims are made for therapy which is at best uncertain. Elaborate studies rarely lead to practical success.

Dr. Hotchkiss has done his work well too. Equally good and very complete it should be read by urologists. In general it appears that their interest in this important problem is in need of stimulation.

CHARLES A. GORDON

Malaria

Practical Malaria Control, A Handbook for Field Workers. By Carl E. M. Gunther, M.D. New York, Philosophical Library, Inc., [c. 1944]. 91 pages. 12mo. Cloth, \$2.50.

WITHIN the compass of a small and very readable volume the author presents concisely a wealth of material pertinent to the broad aspects of malaria control, as well as to the diagnosis and management of the developed case and its complications. Years of experience "as Medical Officer of a large industry in the Mandated Territory of New Guinea" have made Dr. Gunther thoroughly conversant with the problem of malaria as it relates diversely to the native population and to the imported white population of an endemic area in the tropics. The book is written throughout from the point of view of the practising health officer and physician and should be a valuable guide, particularly for the practitioner who for the first time finds himself responsible for the control and management of malaria.

E. J. TIFFANY

A New Approach to Nutrition

An Introduction to Foods and Nutrition. By Henry C. Sherman and Caroline Sherman Lanford. New York, Macmillan Co., [c. 1943]. 292 pages. 8vo. Cloth, \$2.00.

THE authors have succeeded in giving this important subject a thoroughly new approach. It is not merely a going-over of the usual nutrition text and bringing it up to date.

The public, as well as the personal aspects of nutrition are stressed. The needs of normal nutrition are given, and then there is a complete description of the articles and types of foods through which these standards are met.

The study of nutrition becomes stimulating and provocative when approached in this important new manual.

ETHEL PLOTZ BERMAN

New Text on Diagnosis

Medical Diagnosis. Applied Physical Diagnosis. Edited by Roscoe L. Pullen, M.D. Philadelphia, W. B. Saunders Company, [c. 1944]. 1106 pages, illustrated. 4to. Cloth, \$10.00.

THIS is a real textbook of applied physical diagnosis in that it covers not merely a limited field of specialism but the entire scope of medical diagnosis as it is met in general practice. Twenty-seven specialists have given concise accounts of physical diagnosis in their fields including eye, electro-cardiographic, gynecologic, urologic, rectal, and numerous other phases. It would seem that in a book of eleven hundred pages there could only be smatterings of information in the respective principles of medicine. The detail of coverage is striking.

GEORGE E. ANDERSON

Syphilis of the Central Nervous System

The Management of Neurosyphilis. By Bernhard Dattner, M.D., with the collaboration of Evan W. Thomas, M.D., & Gertrude Wexler, M.D. New York, Grune & Stratton, [c. 1944]. 398 pages. 8vo. Cloth, \$5.50.

IN 1933 Dr. Dattner was an assistant in the clinic of Dr. Wagner-Jauregg and he published a monograph on the treatment of neurosyphilis which the reviewer had the privilege of reviewing. In 1938 Hitler came and Dr. Dattner joined a large number of far-seeing scientists who came to America. Thus once again America was enriched by a group of aggressive and constructively productive individuals. Dr. Dattner was able to continue his work in America and he published a new book. The book is an un-

usually practical presentation of the subject with emphasis on the clinical and physiological aspects of the disease. The pathological aspect has not been included. Despite this defect the book is a good one and should have a great appeal to those who are interested in the subject.

IRVING J. SANDS

The Ureters in Pregnancy

Hydronephrosis and Pyelitis (Pyelonephritis) of Pregnancy. By H. E. Robertson, M.D. Philadelphia, W. B. Saunders Co., [c. 1944]. 332 pages, illustrated. 12mo. Cloth, \$4.50.

THIS condensed work of some 300 pages is a valuable contribution to the subject. The author presents a thorough historical and factual review, dating back to the middle of the 18th century. The book covers all phases of the experimental and clinical work done in the various branches of medicine.

The fifteen conclusions drawn by the writer have become well established and should be particularly familiar to the urologist and gynecologist.

Almost a thousand references to the literature are appended. The preface is a tribute to the scholarly and scientific attainments of the author. He has obviously worked laboriously and exhaustively in the preparation of the material in the book.

The work should be upon the shelf of all those concerned with the subject, and should be a valuable addition, also, to the library of the medical student.

AUGUSTUS HARRIS

Survey of the Virus Problem

Virus Diseases in Man, Animal and Plant. By Gustav Seiffert. Translated by Marion Lee Taylor. New York, Philosophical Library, Inc., [c. 1944]. 332 pages, illustrated. 8vo. Cloth, \$5.00.

THIS handbook deserves a place in the library of those interested in virus diseases. Each disease thought to be caused by a virus is discussed with a fairly complete review of the literature. The steps leading to the discovery and identification of each virus, how it is spread and how it produces pathology in man and animal, are discussed. Research as to prevention of the disease in man receives adequate consideration.

THURMAN B. GIVAN

MEDICAL TIMES, DECEMBER, 1944

A Memorial Volume

Harry Koster, M.D. March 18, 1893-June 2, 1943.
A volume dedicated in tribute to his memory by friends and colleagues. Edited by Bruno Kisch, M.D. New York, Brooklyn Medical Press, Inc., [c. 1944]. 103 pages, illustrated. 8vo. Cloth, \$3.00.

THIS little Volume contains a brief biographical sketch of Dr. Harry Koster who, during his short life, achieved a great deal of fame in the field of surgery. The outstanding article in this Memorial Volume is written in deep appreciation of the author's life and accomplishments, and these attainments were not limited to surgery, alone, but embraced the social, physical, and cultural fields of human endeavor.

When Dr. Koster died at the age of fifty years he was looking forward to many new and fruitful adventures in the field of human healing. It is to be deeply regretted that these visions and talents were left unfinished by his untimely demise.

The remaining papers of this book deal with problems pertaining to spinal anesthesia, a subject on which Dr. Koster was an outstanding authority. The research work was all done in the "Richard Morton Koster Laboratory." The subject matter covered is only a small fragment of the numerous complex problems that were studied and solved in this Laboratory.

SAMUEL M. BLOOM

Therapy of Chronic Pulmonary Diseases

Radiation and Climatic Therapy of Chronic Pulmonary Diseases. Edited by Edgar Mayer, M.D. Baltimore, The Williams & Wilkins Co., [c. 1944]. 393 pages, illustrated. 8vo. Cloth, \$5.00.

FOR those who wish to acquaint themselves with the latest authentic exposition of what is known concerning "Radiation and Climatic Therapy of Chronic Pulmonary Diseases," your reviewer strongly recommends a book by that title recently issued by the William & Wilkins Company of Baltimore, Md. This book has been edited by Dr. Edgar Meyer, who has written extensively on the subject of heliotherapy in the past, and who has taken into collaboration with him a number of scientists and clinicians, each with a specialized knowledge of his particular field. The result is a highly dependable and satisfying presentation. Special reference is made to natural and artificial heliotherapy, X-ray therapy, and climatic therapy of chronic pulmonary diseases, and all forms of tuberculosis.

FOSTER MURRAY

A Timely Book for Nurses

Tropical Nursing. A Handbook for Nurses and Others Going Abroad. By A. L. Gregg, M.D. Second Edition. New York, Philosophical Library, Inc., [c. 1944]. 185 pages, illustrated. 16mo. Cloth, \$3.00.

IN THE general nursing curriculum, little attention has been paid to tropical diseases as the necessity for practical application has been slight. Today, however, many nurses are finding themselves in the tropical climes and having to cope with situations with which they are not too familiar.

"Tropical Nursing" will be a valuable aid in preparing these nurses to meet such problems. The author includes description of such diseases as beriberi, bilharziasis, blackwater fever, the various types of dysentery, heat exhaustion, helminthic diseases, malaria, typhus and yellow fever.

A chapter that nurses will appreciate particularly is one on personal hygiene. In safeguarding her own health, she will be able to contribute her best efforts as a nurse.

H. M. FEINBLATT

A Well-Known Pediatrician

Baby Doctor. By Isaac A. Abt, M.D. New York, Whittlesey House, [c. 1944]. 310 pages, illustrated. 8vo. Cloth, \$2.50.

THIS book is an interesting autobiography by Dr. Isaac Abt containing a description of his life and medical career and of the multitude of public and professional activities in which he has taken part. The years concerned have been the most progressive and fruitful for all medical science and in none of the specialties have the developments been greater than in the field of pediatrics. As a leading pediatrician, the author took a prominent part in much of the organization and certain of the developments that have taken place. The improvements which came into use are correlated very well with the periods of Dr. Abt's professional life.

The book is constructive and educational and is written so simply that the non-professional reader can understand it. It is a human story, with much of wise counsel and the opinions expressed are those current today. The volume is important and is of historic value in the field of pediatrics.

JOSEPH C. REGAN

Medical Times

The Journal of the American Medical Profession

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